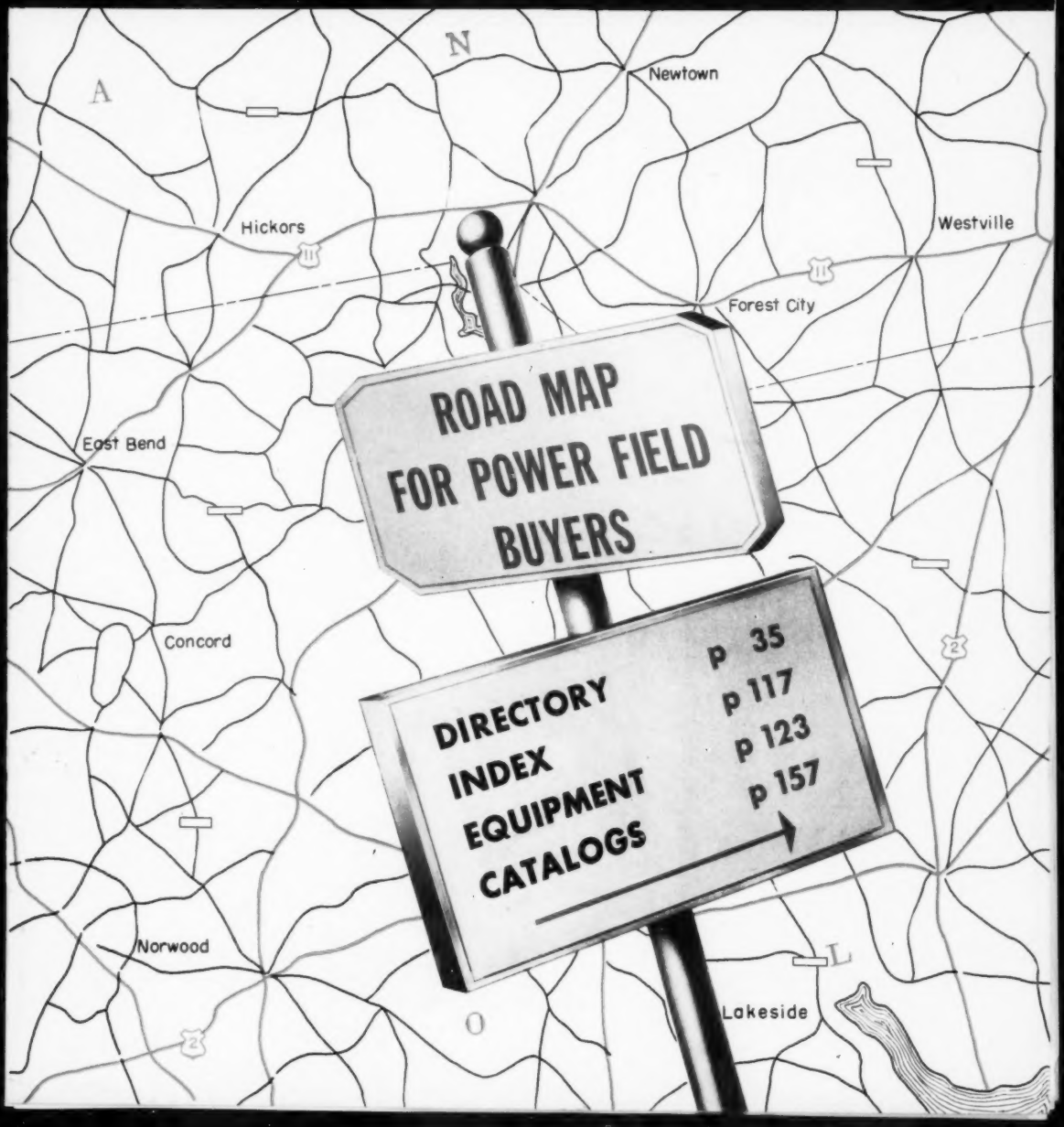
GENERATION, TRANSMISSION AND APPLICATION OF THE POWER SERVICES

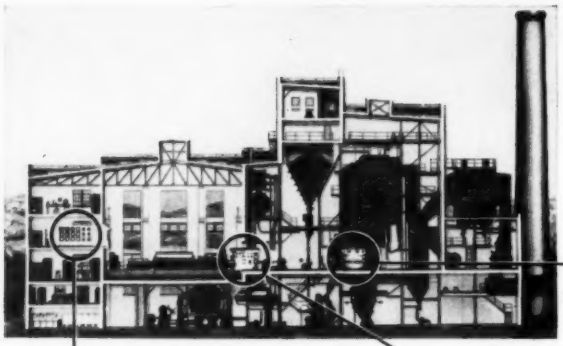
MID-YEAR
BUYERS' GUIDE
NUMBER

Power

Mid-June
1952 · 50¢

A McGRAW-HILL PUBLICATION





FOR BOILER BOARDS

Metermax Combustion Control
Micromax and Speedomax Superheat Control
Micromax and Speedomax Recorders for:
- Per Cent CO_2
- Steam Purity
- Smoke Density
- Temperatures of steam, air preheater, economizer, flue gas, feedwater and other heat-balance points.

FOR ELECTRICAL BOARDS

Load-Frequency Control
Telemeters
Micromax and Speedomax Recorders for:
- Frequency
- Voltage (A-C and D-C)
- Current (A-C and D-C)
- Power Factor
- Kilowatts
- Reactive Kva
- Temperature of bearings, rotors, stators, transformers, cables, etc.

FOR TURBINE BOARDS

Micromax and Speedomax Conductivity Recorders for purity of condensate, etc.
Micromax and Speedomax Recorders and Indicators for temperature of condensate, cooling water, bearings, hydrogen cooler, etc.
Micromax and Speedomax pH Recorders and Controllers for feedwater treatment
Centrimax Flowmeter.

Plant Efficiency--from Btu's to Megawatts--is Guarded by Dependable L&N Instruments

A KEY factor in obtaining accurate, high-availability performance of instruments and controls is the comprehensive line of L&N equipment for boiler, turbine and electrical control boards. Here are typical facts behind the widespread acceptance of these equipments in hundreds of plants:

Boiler Boards: Metermax Combustion Control pioneered the use of electric drive mechanisms in a unique electro-pneumatic control system . . . The Micromax CO_2 Recorder made automatic analysis of flue gas industrially practical . . . For temperature measurements, Micromax and Speedomax instruments and their primary elements are the result of over 40 years' experience.

Turbine Boards: Virtually every sizeable steam plant relies on Micromax and Speedomax Conductivity Recorders for measuring condensate purity . . . The Centrimax Flowmeter is, to the best of our knowledge, the most accurate industrial flowmeter made today . . . Recording and control of pH, vital to feedwater treatment, was first made practical by the development of L&N equipment.

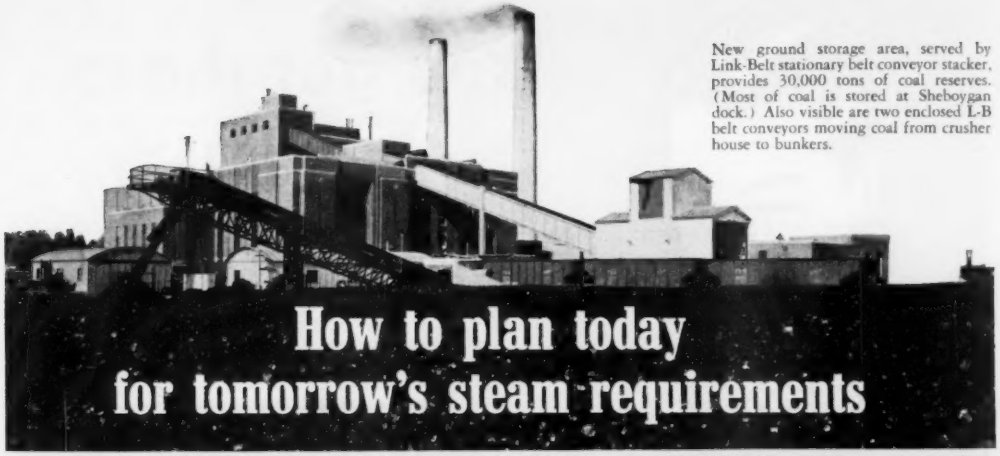
Electrical Boards: L&N Load Frequency Control and Telemeters today are operating in over 90 per cent of the interconnected systems in this country—regulating some 50 million kilowatts of generating capacity.

For details of how these and other L&N instruments can bring new dependability to your plant, contact our nearest office or write us at 4987 Stenton Avenue, Philadelphia 44, Pa.

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

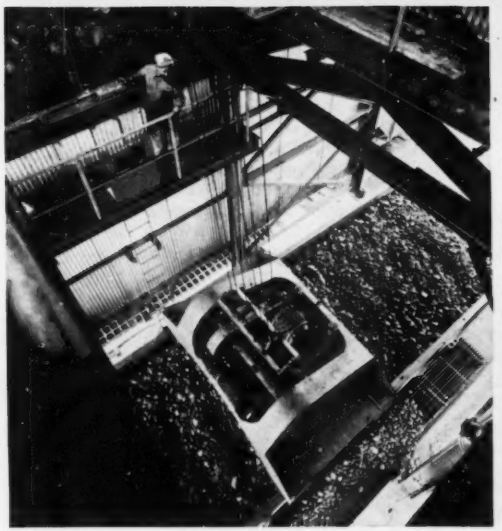
LEEDS & NORTHRUP CO.

Jrl. Ad. N-460(6a)

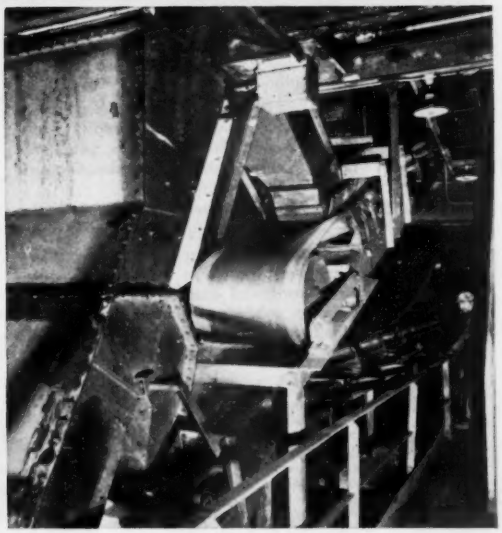


New ground storage area, served by Link-Belt stationary belt conveyor stacker, provides 30,000 tons of coal reserves. (Most of coal is stored at Sheboygan dock.) Also visible are two enclosed L-B belt conveyors moving coal from crusher house to bunkers.

How to plan today for tomorrow's steam requirements



Link-Belt car shaker in coal unloading house expedites unloading of railroad cars. Reciprocating feeders below track hoppers feed belt conveyor leading to crusher house and also stationary stacker.



Unique arrangement for distributing coal to tripper over original bunkers, to inclined belt conveyor leading to new bunkers at higher level, and, through chutes, to front end of original bunkers.

LINK-BELT Coal Handling Equipment, 20 years old, is utilized in 100% expansion of power plant

When Link-Belt installed the coal handling system for Wisconsin Power & Light Company's Edgewater Station at Sheboygan in 1931, provision was made by Sargent & Lundy, the consulting engineers, for future expansion. Twenty years later, with a minimum of rearrangement, this plant was enlarged by ⅔. It now efficiently handles 250,000 tons of coal per year.

Link-Belt coal handling equipment is used at other Wisconsin Power & Light plants. Like many power companies all over the country, they rely on Link-Belt to hold rail-to-boiler coal handling costs to a minimum.

A new 44-page book, No. 2410, contains drawings and photographs of many outstanding coal handling systems of all types—large and small. Send for a copy of this useful source book.

LINK-BELT

COAL HANDLING EQUIPMENT

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices in Principal Cities. 12,500

You get these

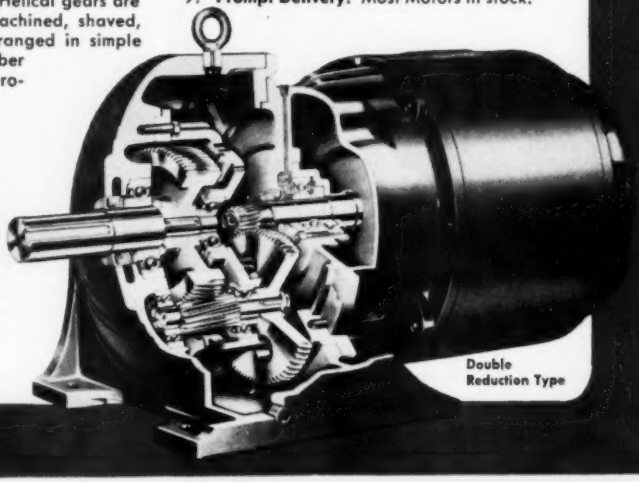
9 POINTS

of SUPERIORITY in

PHILADELPHIA GEARMOTOR

1. **Compact.** Designed to conserve greatest space without sacrificing strength or accessibility.
2. **Simplified Assembly.** Motor and gear unit each self-contained and readily separated. In multi-reduction units, gears may be inspected without disconnecting unit from driven machine.
3. **Balanced for Strength.** Gear unit designed to provide high aperating stability.
4. **Quiet, Long-life Gears.** Helical gears are alloy steel, precision machined, shaved, wear hardened and arranged in simple train to minimize number of moving parts and promote quiet operation.
5. **Bearings.** Anti-friction bearings used throughout.
6. **Motors.** Reliance Precision-Built A-c or D-c Motors provide dependable power.
7. **Positive Lubrication.** Splash system with large oil reservoir assures constant lubrication and cooling of all parts.
8. **Standardized Construction.** Interchangeable stock parts simplify assembly and maintenance.
9. **Prompt Delivery.** Most Motors in stock.

For fast application of electric drives to individual machines the Philadelphia GearMotoR offers economical, efficient and dependable performance. They are available in single, double and triple reductions with a wide range of speeds: 780 through 7.5 r.p.m. Motor ratings from 1 h.p. through 60 h.p. For full details write on your business letterhead for Catalogue GM-48.



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MID-JUNE, 1952 VOLUME 96 NUMBER 6BG

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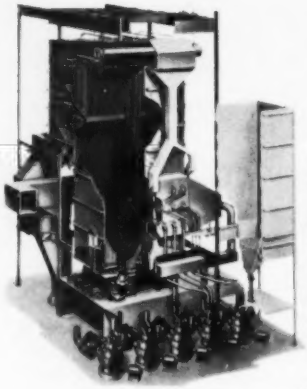
B&W

CENTRAL STATION AND INDUSTRIAL

BOILERS

A SINGLE RESPONSIBILITY

An important advantage in the selection of B&W steam generating equipment is the ability of The Babcock & Wilcox Company to furnish completely integrated units—from raw-coal feeders or fuel-oil tanks to breechings and stacks—backed by the undivided responsibility of a single manufacturer.



B&W CENTRAL STATION BOILERS

High-duty central station boilers, manufactured by B&W since 1881, are available in a wide variety of designs—either slag tap or dry bottom in Radiant or Open-Pass types. B&W engineers recommend the unit that best meets individual customer requirements. High availability with low operating and maintenance costs, characterizes B&W installations in the nation's largest power plants. The B&W Radiant Boiler illustrated generates 1,370,000 pounds of steam per hour at a pressure of 1500 psi with a steam temperature of 1050F.

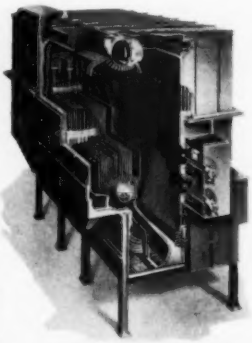
B&W INTEGRAL-FURNACE BOILERS

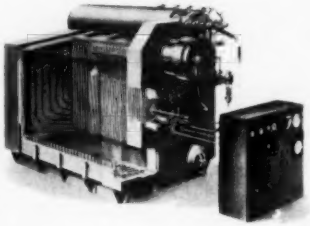
To make the performance-proved advantages of the B&W Integral-Furnace Boiler available for any steam requirements in the range between 2,800 to 350,000 pounds per hour, and for all fuel conditions, B&W has developed five distinct types of Integral-Furnace Boilers. These units embody installation, operating, and maintenance features that make possible greater boiler efficiency, availability, continuity of service, and overall economy.

Since the introduction of the original Integral-Furnace Boiler in1933, these compact, water-cooled-furnace units have won wide acceptance from industrial, commercial, and utility users. They provide maximum capacity in small boiler-room space; high fuel economy; smokeless combustion; and economical, fast steaming. These boilers produce clean, dry steam at all ratings with quick response to wide load swings. Available with or without superheater, these units are easy to clean and adaptable to the most advantageous method of firing.

Newest member of the B&W Integral-Furnace Boiler family is the Type FM, a completely shop-assembled unit which combines all the benefits of "package" steam with the traditional economy and advantages of the Integral-Furnace design. The Type FM is in service for steam requirements from 2,800 to 28,000 pounds per hour at pressures up to 250 psi with either oil or gas firing.

The Type FH is the largest of B&W's Integral-Furnace Boilers with a capacity ranging to 350,000 pounds of steam per hour at pressures to 1050 psi. Available with either hopper-bottom or flat floor, these units can be fired with pulverized coal, oil, and gas, singly or in combination.





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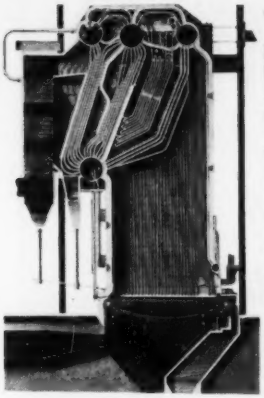
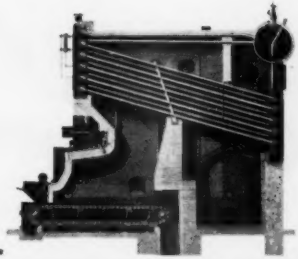


THE STIRLING BOILER

Prototype of present-day bent-tube boilers, the Stirling Boiler has successfully met the most severe requirements for power and processing by public utilities and industrials. It has the ability to meet not only the demands that can be properly anticipated, but also those which unexpectedly arise during operating emergencies.

Clean, dry steam can be produced continuously and economically, even with boiler water of high concentration.



THE STIRLING BOILER 2 DRUM

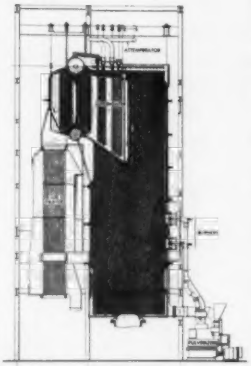
Peak-load demands and sudden load swings can be met over unusually wide ranges.

A simple and reliable super-heat control is provided by use of attemperators.

The flexible design can be adapted to any type of furnace, fuel, or method of firing.

Low maintenance is assured by simplicity of construction.

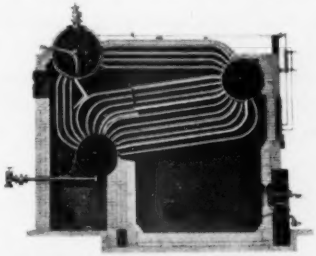
Easy accessibility to any part of the boiler permits quick inspection and cleaning.



B&W DESIGN 32 CROSS-DRUM BOILER

This type B&W boiler can be supplied to give up to 40,000 pounds of steam per hour. It is usually installed where floor space is limited and headroom is minimum. Appreciable savings in installation costs are realized with this boiler because its low draft loss usually permits operation under natural-draft conditions. The standardized boiler is available for pressures up to 250 psi. For moderate superheated steam temperatures up to 100F, a superheater can be furnished without change in standard design or construction. It is suitable for firing methods with which refractory furnace walls may be used. Important features are:

1. Ease of inspection, cleaning, and maintenance due to the straight-tube sectional-header construction.
2. Good efficiency because the cross flow of gases in the unit gives high heat transfer rates and consequently low steam generating costs.



TYPE H STIRLING BOILER

The Type H Stirling Boiler is admirably adapted to the modernization of those power plants where minimum floor space is available and headroom is limited. Steam capacities up to 50,000 pounds per hour may be attained. It can be designed for any pressure between 160 and 475 psi. A superheater may be added to give up to 175F superheat. The Type H boiler can generally be installed with minimum alterations to existing buildings. It can be adapted to stoker, oil or gas firing, with or without water-cooled walls.

BABCOCK & WILCOX

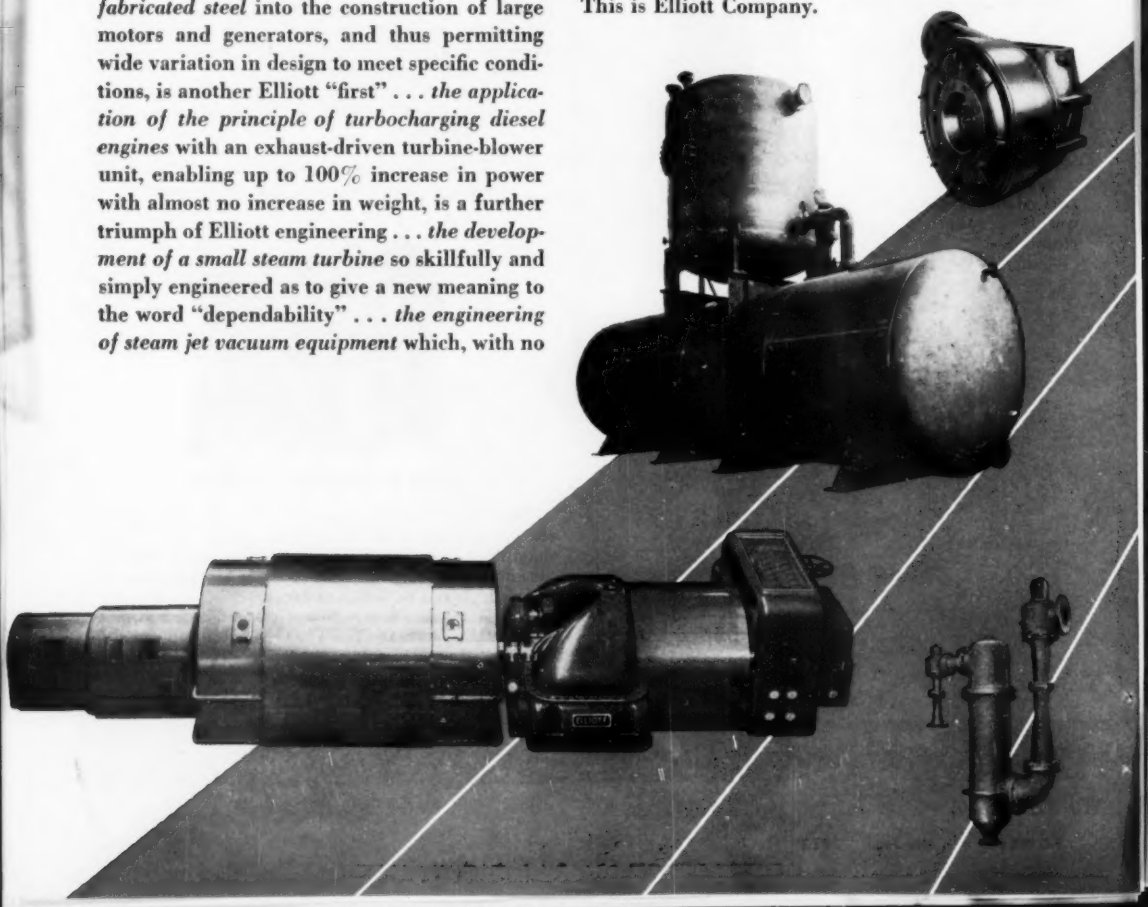
THE BABCOCK & WILCOX COMPANY—BOILER DIVISION

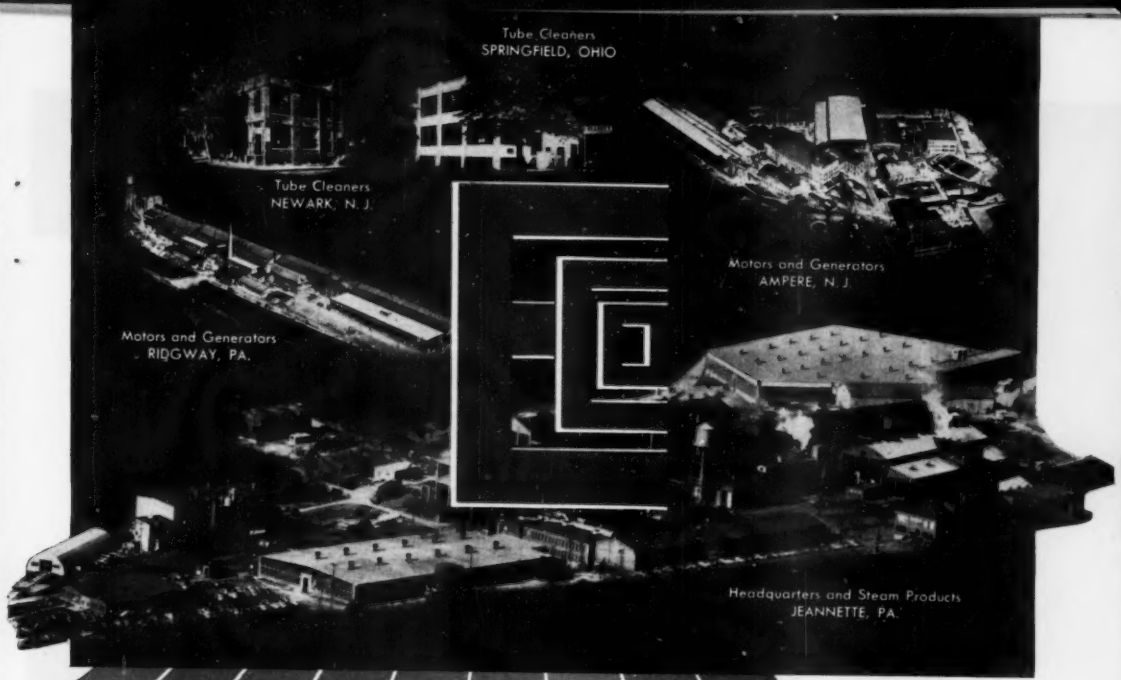
161 EAST 42nd STREET, NEW YORK 17, N. Y.

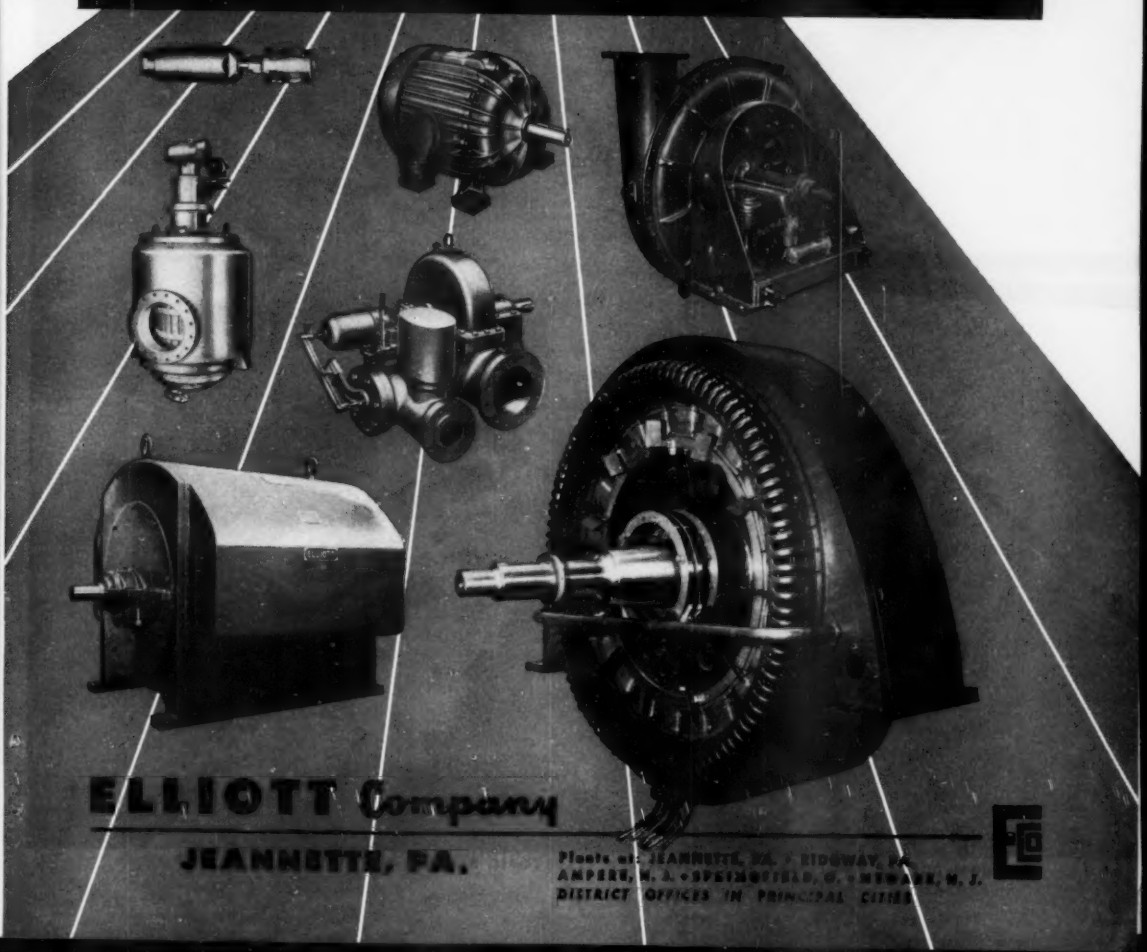
This is ELLIOTT COMPANY

Sparkplug of progress in power generation and the process industries!

WINNING THE WAR WITH CORROSION in steam power systems, was the direct result of Elliott engineers' work in *deaeration* — the removal of rust-causing oxygen from boiler feedwater. Today, Elliott deaerating heaters are protecting power plants everywhere . . . *introducing the crack-proof strength and rigidity of fabricated steel* into the construction of large motors and generators, and thus permitting wide variation in design to meet specific conditions, is another Elliott "first" . . . *the application of the principle of turbocharging diesel engines* with an exhaust-driven turbine-blower unit, enabling up to 100% increase in power with almost no increase in weight, is a further triumph of Elliott engineering . . . *the development of a small steam turbine* so skillfully and simply engineered as to give a new meaning to the word "dependability" . . . *the engineering of steam jet vacuum equipment* which, with no moving parts, produces a new low in commercial absolute pressures . . . all these and more are the contribution of a single organization to America's industrial progress, the combined plants of which total 27 acres of modernly equipped productive area, backed by a nationwide engineering and service organization. This is Elliott Company.







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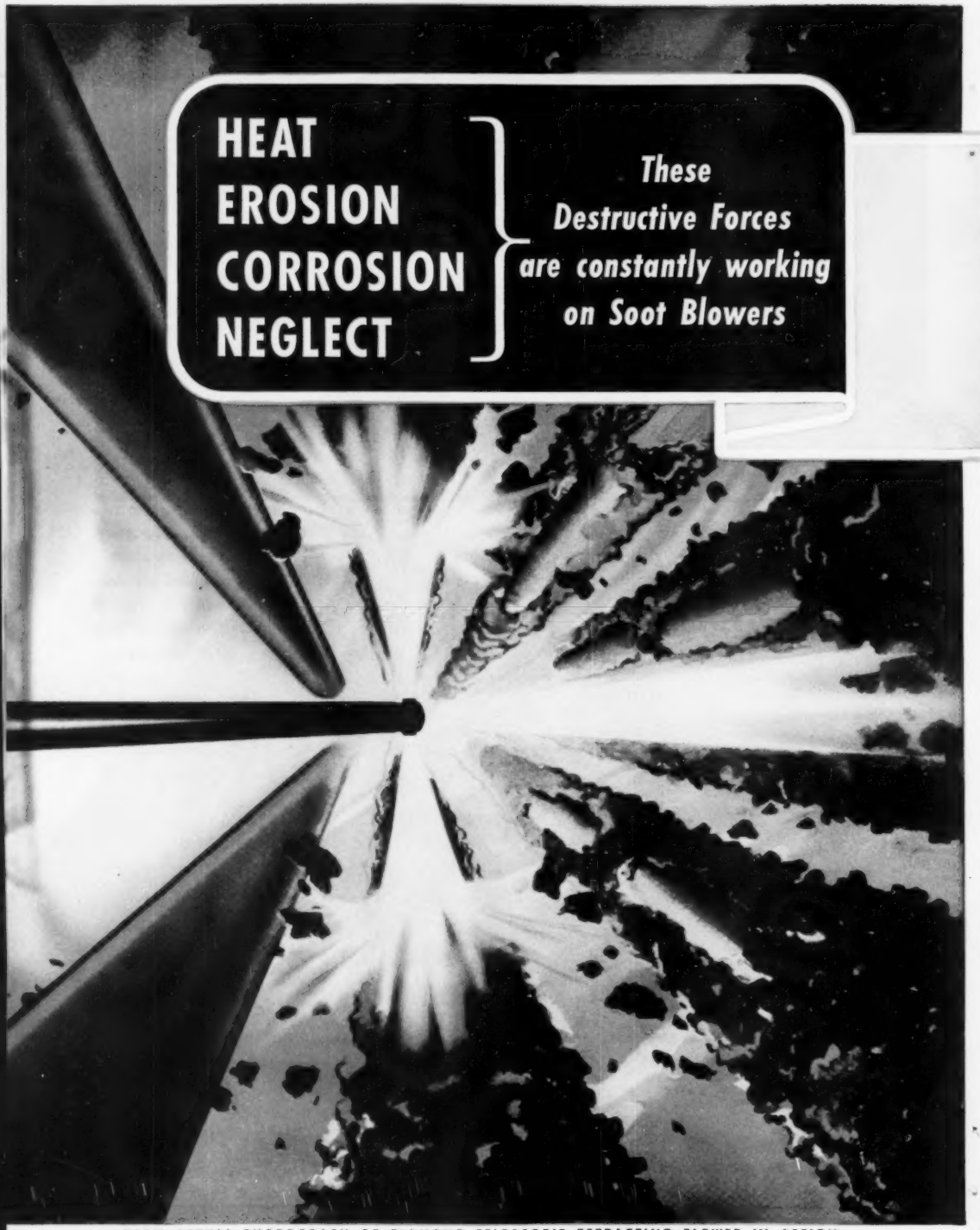


FROM ACTUAL PHOTOGRAPH OF DIAMOND TELESCOPIC RETRACTING BLOWER IN ACTION

This ad first appeared in the April 1940 issue of "Power". Its message is even more important today!

That's why you need the BEST SOOT BLOWERS MONEY CAN BUY!

No other equipment in the power plant has so much demanded of it as have the soot blowers. Soot blowers receive less attention than anything else—must meet conditions of heart-breaking severity—rarely get even so much as a drop of oil. Heat, erosion, corrosion, neglect—all these destructive forces are at them continually.

Yet, soot blowers are expected to do their work—instantly—efficiently—any time—month after month and year after year. Their installed cost is only a minor portion of the cost of any power plant, so—

Why try to save on the capital cost of anything of which you expect so much? Certainly the very best you can get is none too good for such an assignment. The great majority of power engineers have found that the extra values of Diamond Soot Blowers are worth far more than their slight additional cost.

DIAMOND POWER SPECIALTY CORP., ~~Detroit, Michigan~~ Lancaster, Ohio
DIAMOND SPECIALTY, LIMITED, Windsor, Ontario

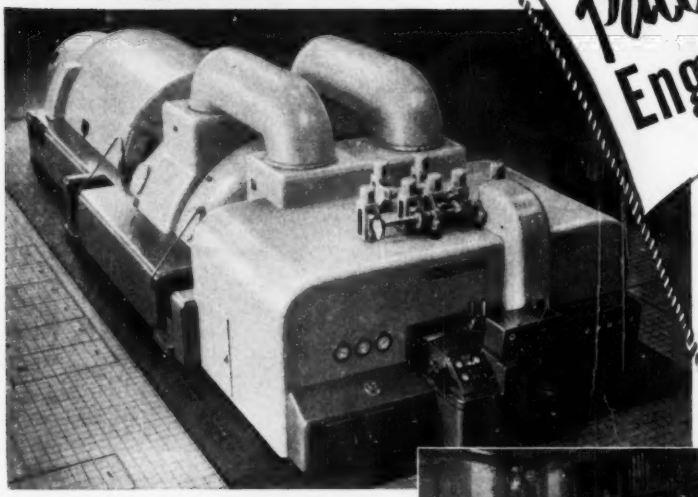
Diamond Soot Blowers are Used in More Than 80% of All Modern Power Boilers

4512

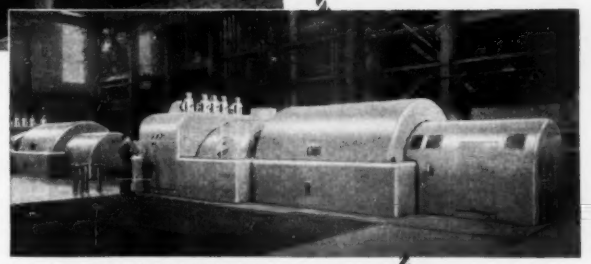
The World's Fastest
TUBE BENDING SERVICE
BOILER TUBE CO. OF AMERICA
McKEES ROCKS, PA.
(Pittsburgh District)
PITTSBURGH · CHICAGO
FRED S. RENAULD & CO., LOS ANGELES

STEAM-TURBINE Generator Units

For Pace-Setting Engineering



In this 60,000-kw turbine-generator, *supercharged* hydrogen is directed through the rotor conductors. Resulting cooling efficiency raises output per unit size . . . cutting foundation costs, plant size, and breaker and bus structure requirements.



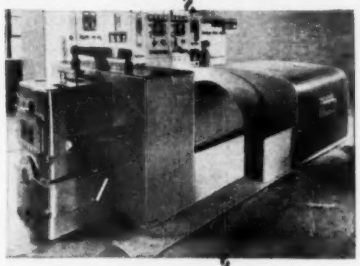
These recently installed 20,000-kw, 3600-rpm turbine-generator units are representative of the 20,000 and 30,000-kw single-cylinder design conforming to AIEE-ASME preferred standards.

WHETHER YOU REQUIRE a 200,000-kw central station turbine-generator or a small industrial unit, you can turn to Allis-Chalmers for the engineering advances that count.

Supercharged hydrogen cooling of generators . . . simplified hydrogen seal and control . . . world's lowest exhaust pressure turbines . . . solidly bolted down steam end pedestal . . . 825 F reheat turbine in 1935 — these are some of the A-C *firsts* in turbine-generator development.

With units up to 173,000 kva in successful operation, A-C supplies a complete line of condensing, non-condensing and automatic extraction turbines—and matching surface condensers. The bulletins listed below — and your A-C representative — can help to show you why you will gain most by specifying Allis-Chalmers units.

WA-Series turbine-generators, such as this 2500-kw unit, are built in ratings through 7500 kw. This series combines impulse turbines with housing-type air-cooled generators in a compact three-bearing arrangement.



CHECK THIS BULLETIN LIST

25B6150 — Power Equipment
19B6784 — Surface Condensers
03B6801 — Standardized Steam Turbines
03B7654 — WA-Series Steam-Turbine Generator Units
05B7773 — *Supercharged* Cooling of Generators

A-3761A

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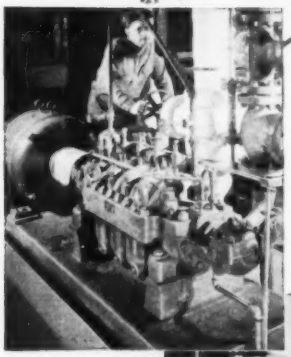
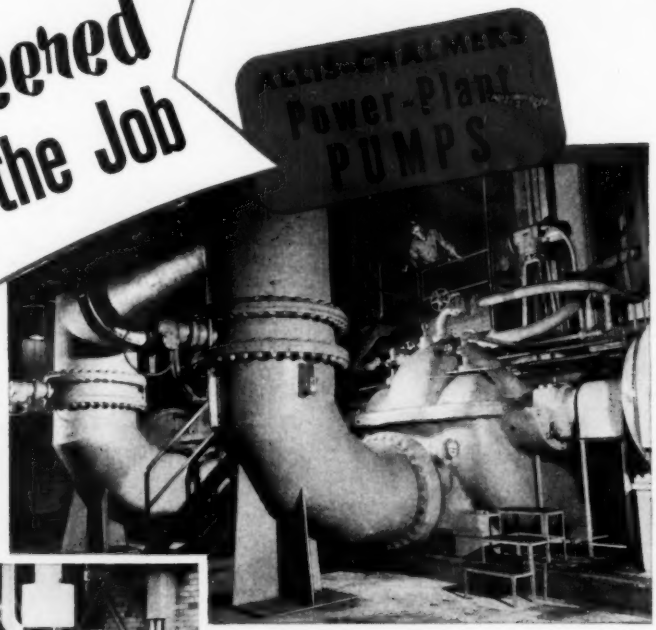
A-C ALLIS-CHALMERS

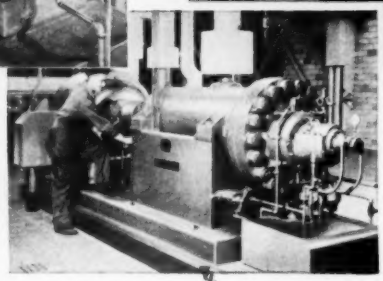
Milwaukee 1, Wisconsin

Engineered to Fit the Job

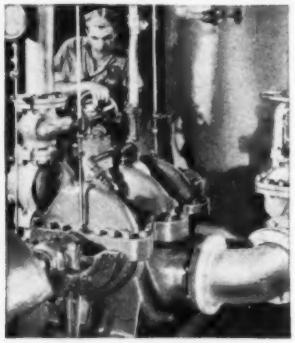




These double-suction centrifugal circulating water pumps are rated 35,000 gpm, 20-ft head. A-C also builds vertical axial and mixed flow types — providing a broad line that covers all installation requirements.



For boiler-feed service, Type M pumps provide heads up to 1200 psig. Barrel-type pumps offer high efficiencies in the pressure range of 1200 to 3000 psig, in ratings from 300 to 2500 gpm. Units shown are (above) 175 gpm, 1325-ft head and (right) 480 gpm, 4271-ft head.



Condensate pumps are designed and built for operating under vacuum and handling liquid at or near its boiling point. They are available in single and multi-stage types for vertical and horizontal mounting.

WHEN YOU TURN to Allis-Chalmers, you get triple insurance that each pump will fit your requirements:

(1) You gain application engineering based on more than 60 years of centrifugal pump experience and research . . . (2) You select from a wide, diversified line, with each pump custom-engineered for its specific job . . . (3) You get pumps that are individually tested, on the most modern test floor in the industry, to assure complete compliance with the specifications.

This triple insurance can cover all of your major pump requirements . . . from high-pressure boiler-feed units to solids-handling ash sluice pumps . . . horizontal or vertical . . . centrifugal, mixed or axial-flow types. You gain by calling in your A-C representative for help.

WRITE FOR *Bulletin 52B6059, listing Allis-Chalmers pump types and ratings.*

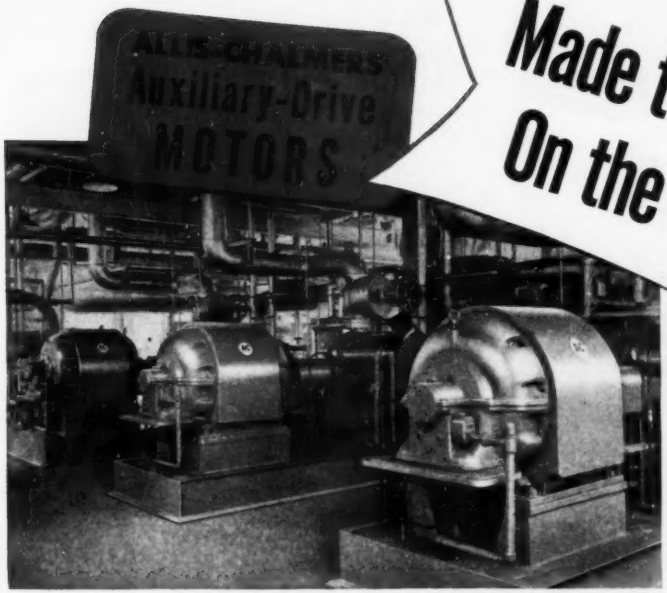
A-3761B

ALLIS-CHALMERS

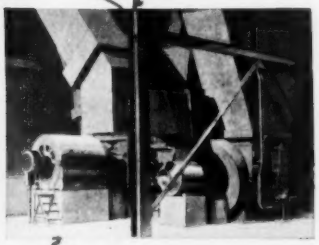
A-C ALLIS-CHALMERS

Milwaukee 1, Wisconsin

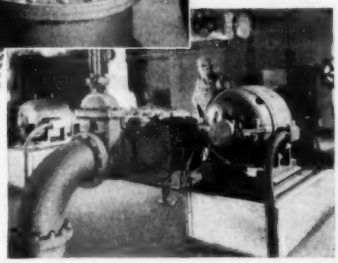
Made to Stay On the Job



These two-pole boiler-feed pump motors feature combined ring and forced-feed oiling, pressure chambers that keep oil out of windings, forged end rings, separate balancing rings, oxygen-free dew-drop bars, and special internal ventilation.



Above . . . *Tube-type* air-to-air heat exchanger construction, as used in these wound-rotor and cage motors driving draft fans, makes large totally-enclosed fan-cooled ratings practical. Self-cleaning action plus complete enclosure and full internal air circulation cut maintenance and stretch motor life.



A-C offers a complete range of pump motors —in both vertical and horizontal designs. Motors shown here are driving condensate removal, house service, and ash sluice pumps.

ALLIS-CHALMERS MOTORS stay on the job because they are engineered to handle tough jobs. Bearing construction suited to motor speed and size, special power-plant insulation, accessibility that encourages life-stretching routine maintenance . . . and many other design features add up to provide the peak reliability you need in auxiliary-drive motors.

Moreover, a choice of open drip-proof, splash-proof, weather-protected, and totally-enclosed types offers a motor to fit each drive and every ambient condition . . . indoors or out. Motor ratings range from general-purpose sizes to the largest used in power plants.

Ask your A-C representative for the bulletins listed below. See for yourself how much you can gain by specifying Allis-Chalmers motors . . . and matching control.

A-3761C

THESE BULLETINS CAN HELP YOU

51B6052—Handy Guide (Motors & Control)
05B7150—*Tube-Type* TEFC Motors
05B7542—Large Squirrel-Cage Motors
05B7550—Large 2-Pole Cage Motors
05B7629 — Large Vertical Induction Motors

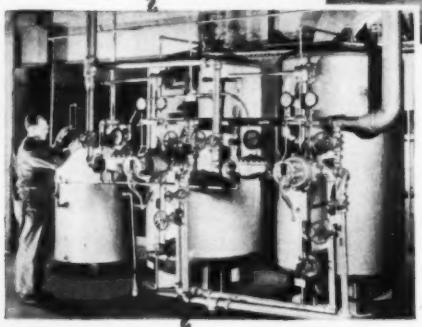
ALLIS-CHALMERS

A-C ALLIS-CHALMERS

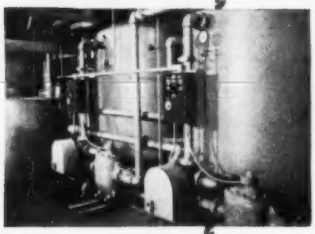
Milwaukee 1, Wisconsin

FOR WATER that Fits Your Needs

This hot process lime-soda softener for treating makeup to high-pressure boilers is rated at 5000 gph.



Sodium zeolite water conditioning equipment with capacity of 130 gpm provides boiler makeup to evaporator in an eastern utility power plant.



Dual automatic sodium zeolite water softener rated at 225 gpm is used in power plant of a Texas hospital.

TO ASSURE YOU water conditioned to your specific requirements, A-C engineers can draw on years of experience treating all types of water . . . plus a broad background of building turbines and processing equipment that are dependent on properly treated water. A-C water conditioning service includes:

Chemicals — for external and internal boiler water treatment . . . designed for silica removal and control of scale, corrosion and carryover. Also cooling cycle treatments . . . and dependable reagent chemicals.

Equipment — hot and cold process softeners . . . sodium and hydrogen zeolite softeners . . . alkalinity-reducing ion exchangers . . . deionizers . . . degasifiers . . . deaerating heaters . . . chemical feeding equipment . . . pumps . . . oil removal and water filters.

Comprehensive consultant service — surveys, reports . . . chemical and X-ray analysis . . . special studies.

WRITE FOR THESE BULLETINS

28X7636 — Meaning, Application and Measurement of pH

28X7559 — Hot Process — Hot Zeolite System

28B6611 — Hot Process Softener

28B7107 — Sodium Zeolite Softener

28X7808 — Alkalinity-Reducing Ion Exchanger

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

A-3761D

Milwaukee 1, Wisconsin

Gold Depository in Fort Knox, Kentucky

. . . more important than gold!

The most important metal today is not the tons of gold buried at Ft. Knox!

Far more important are the millions of tons of iron and steel scrap so desperately needed to make new steel. All scrap, actual and potential, needs to be gathered up and channeled to the steel producing plants-NOW, today, tomorrow and tomorrow. So long as the steel industry is called upon to produce two million and more tons of ingot steel per week, it must have one million and more tons of scrap each week.

Steel producers are getting the iron ore, limestone and coal they need. But the scrap situation is critical and will continue to be so until inventories are built up substantially.

As a user of steel--as one interested in seeing that America's rearmament program is not too little and too late--you can do your part to see that your community and your business keep scrap moving toward the mills.

YOUR SCRAP IS NEEDED — YOUNGSTOWN

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
Export Offices--500 Fifth Avenue, New York
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

The steel industry is using all its resources to produce more steel, but it needs your help and needs it now. Turn in your scrap, through your regular sources, at the earliest possible moment.

PENBERTHY *Jet Pumps*

(EJECTORS • EDUCTORS • EXHAUSTERS • SYPHONS)

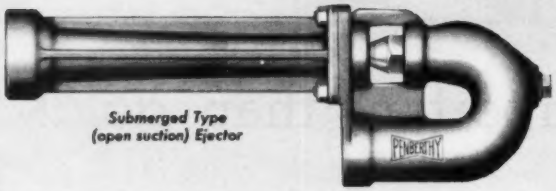
Often the MOST ECONOMICAL and EFFICIENT WAY to Transfer and Mix Fluids

The jet pump is a simple device which uses steam, water or air under pressure to pump (or mix) fluids that can include solids in suspension. Jet pumps have no moving parts, need no lubrication, have no packing glands, are practically noiseless. They are low in initial cost and installation cost . . . compact in size and trouble-free. Penberthy offers a variety of jet pumps for a wide range of ordinary and unusual applications. They can be made from materials that withstand corrosion, contamination and high temperatures. Ask for new Bulletin 512.

Standard Ejector for Steam or Air Operation

Standard Hydraulic Ejector

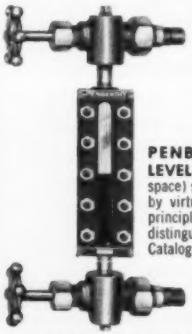
Stainless Steel Jet Pump for Handling Corrosive Chemicals



Submerged Type (open suction) Ejector

WRITE FOR *New* BULLETIN No. 512

OTHER PENBERTHY PRODUCTS



PENBERTHY TRANSPARENT LIQUID LEVEL GAGE—Used to observe color and density of liquids under high pressures and/or temperatures. Exceptionally sturdy construction—liquid chamber machined from solid block of metal. Ask for Catalog 35.

PENBERTHY REFLEX LIQUID LEVEL GAGE—Empty space (or steam space) shows white and liquid shows black by virtue of a simple, unvariable optical principle. Accurate reading as far as you can distinguish black and white. Write for Catalog 35.

PENBERTHY AUTOMATIC INJECTOR—Will supply feed water to boiler at minimum cost. Quickly, easily installed, reliable under most severe operating conditions. Ask for Bulletin 513.

4731

PENBERTHY INJECTOR COMPANY

DIVISION OF THE BUFFALO-ECLIPSE CORPORATION

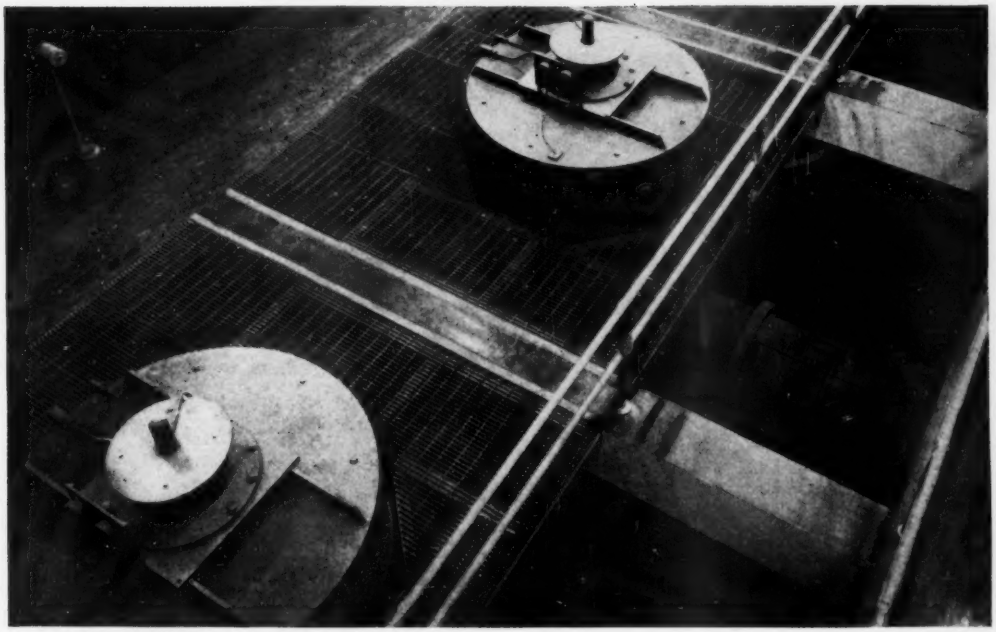
Detroit 2, Michigan

•

Established 1886

•

Canadian Plant—Windsor, Ontario



Hendrick Mitco Grating in a Sewage Disposal Plant

Hendrick Mitco Steel Grating

Made into integral panels, under hundreds of tons of hydraulic pressure, Hendrick Mitco Steel Grating has no bolts, rivets or angle irons to loosen, or to collect dirt or refuse—no welds, liable to have residual stresses and lead to warping.

Not only is Hendrick Mitco particularly suitable for flooring in industrial and public utility plants, but for walkways between buildings and shipboard installations. The rectangular, square-edged steel bars provide a safe, non-slipping, level walking surface; while there is 90% open area for the passage of light and air.

Hendrick Mitco will withstand hard traffic and heavy loading without any lateral deflection of bars. To meet various loading requirements, bearing bars range from $\frac{3}{4}'' \times \frac{1}{8}''$ to $2\frac{1}{4}'' \times 3/16''$; cross bars from $\frac{5}{8}'' \times \frac{1}{8}''$ to $1\frac{1}{4}'' \times \frac{1}{8}''$.

HEAVY-DUTY GRATING

To sustain unusually heavy loading or trucking, and for outdoor drainage installations, coal grizzlies, and similar applications, Hendrick furnishes grating made of still heavier bars.

Hendrick Heavy-duty Grating has bearing bars ranging from $2\frac{1}{4}'' \times \frac{3}{8}''$ to $4'' \times \frac{3}{8}''$; cross bars from $2'' \times 5/16''$ to $2\frac{1}{2}'' \times 5/16''$.

In a prominent steel casting plant, Hendrick Heavy-duty Grating used for knockout floors has paid for itself many times over in reclaimed sand.

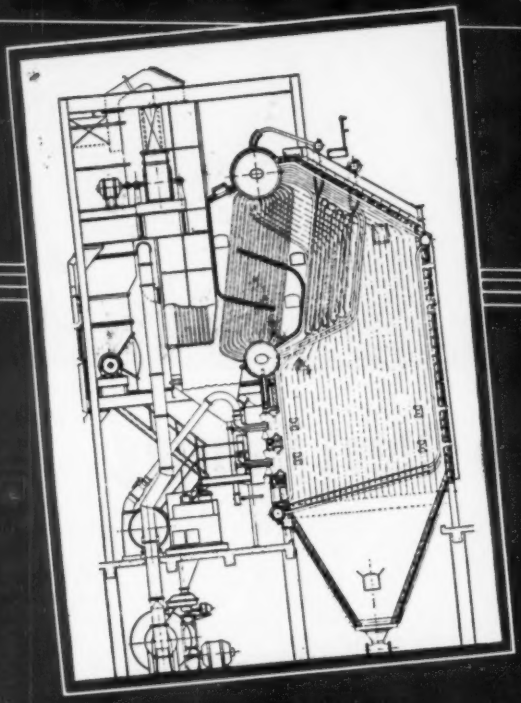
For full details, write for copy of Hendrick Mitco Products Catalogue

SEE OUR CATALOG IN SWEET'S

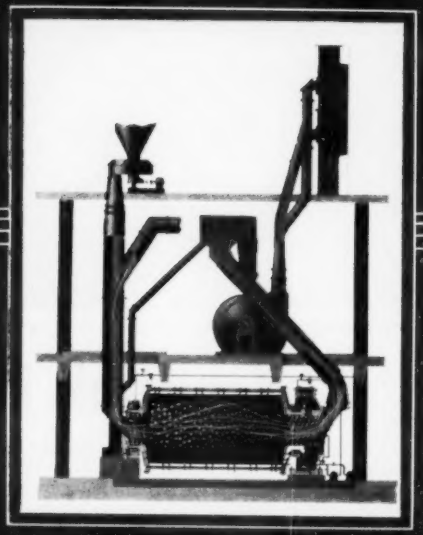
Perforated Metals
Perforated Metal Screens
Wedge-Slot Screens
Architectural Grilles
Mitco Open Steel Flooring,
Shur-Site Treads, Armorgrids

HENDRICK
Manufacturing Company
46 DUNDAFF STREET, CARBONDALE, PENNA.
Sales Offices In Principal Cities

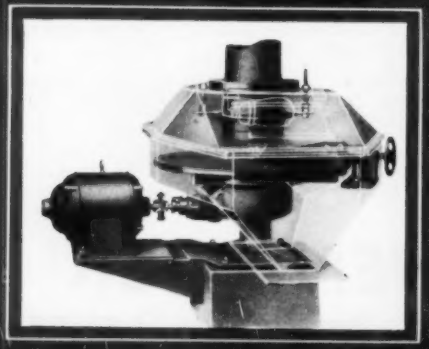
KVS Engineered



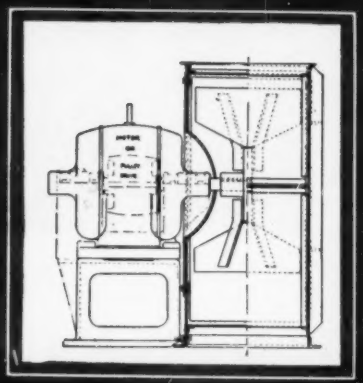
BOILERS, WATER WALLS



PULVERIZERS



FEEDERS



FANS

BOILERS and Equipment

for operation on any fuel that will burn

ANY CAPACITY ANYWHERE

BOILERS

Available in standard designs in the range from 25,000 to 500,000 pounds of water evaporated per hour, from saturated temperatures to 900°F. at superheater outlet. Furnace volume, area and arrangement of heating surface, the generation of superheat and its control are engineered to meet the requirements of the specific plant.

FEEDERS

Enclosed Disc Type and extremely reliable in feeding coarse or fine material. Rate of feed easily varied. Complete enclosure prevents dust from escaping to boiler room. Accuracy of feed not affected by moisture in room.

FANS

Especially designed for pulverized fuel, the weight of a KVS Fan is several times that of the average exhauster. Substantially built with Herculite steel liners, heavy shafts, heavy bearings, stronger blade arms, stronger spiders. Made in sizes from 20" to 120" and designed for motor, pulley or steam turbine drive.

PULVERIZERS FOR WET OR DRY COAL

The KVS Air Swept Tube Mill is a slow speed ball mill which assures perfect pulverization by air separation. It will prepare all grades of coal at low cost. Superfine pulverization with wet coal ground in hot air results in the preparation of a carbureted fuel which is floated out as an impalpable power and fed to the burners. Basic principle of operation is an exclusive KVS feature.

COAL BURNERS

This component may be either of the rotary or vortex type, is low in first cost and maintenance and high in availability. High turbulence completes carburization of coal and assures high furnace temperature on all grades of coal.

PREHEATERS

KVS Preheaters assure high overall efficiency with low exit gas temperatures. Downdraft gas and cross counterflow air type. Minimum pressure drop.

SUPERHEATERS

Final superheat temperatures controlled by most suitable methods: Separately fired superheater section, thermostatically controlled feedwater injection, external exchange of heat or by use of dampers. Uniform steam temperatures assured at wide ratings.

STEAM PURIFIERS

The KVS cyclone type steam drier and purifier produces steam in which the impurity carryover is less than .5 parts per million and the moisture content is less than ¼ of 1% with 100% feed water makeup. Recontamination of boiler water is eliminated by removing concentrations from the boiler.

COMPLETE PLANTS

KVS ENGINEERING SERVICE

Kennedy Van Saun offers a service in the design, furnishing and erection of complete steam power plants for operation in any part of the World where fuel and water are available. This service contemplates all components, including electrical units, whether or not actually built by KVS, "from bunker to bus bar," and for operation on lowest grades fuel including waste, tailings, washings, in fact on any fuel, solid or liquid that will burn. The successful handling of this class of work in locations outside the continental limits of the United States is assurance that KVS service can be valuable to you *anywhere*.

KENNEDY-VAN SAUN · Kennedy Products · NEW YORK USA · MFG. & ENG. CORP. · QUALITY · SERVICE

Kennedy-Van Saun

MANUFACTURING AND ENGINEERING CORPORATION

ARMY E NAVY

2 PARK AVENUE • NEW YORK 16, N. Y.

FACTORIES: DANVILLE, PA.

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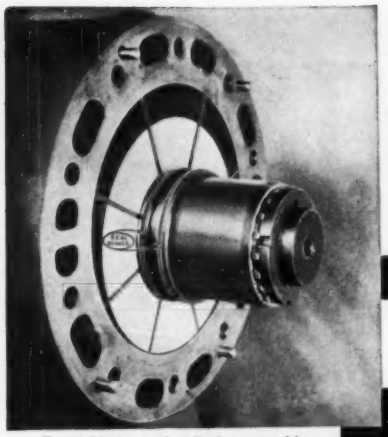
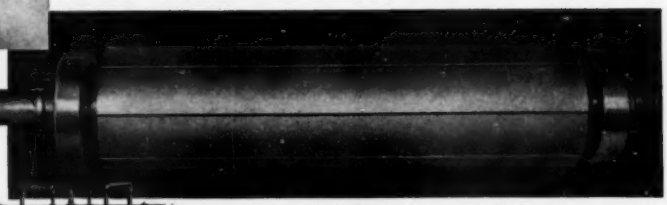


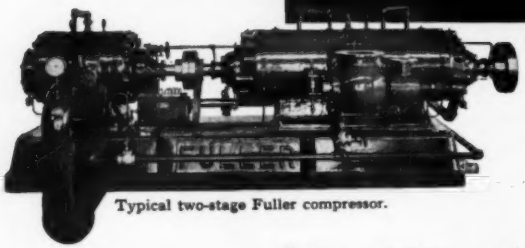
Rotor blades and cylinder assembly.

a lot of maintenance men have never seen inside a

FULLER COMPRESSOR



Accurately balanced, steel rotor with bearings mounted.



Typical two-stage Fuller compressor.

Rotor . . . bearings . . . blades—the only moving parts in a Fuller Rotary Compressor. There you have the three reasons why these compressors keep out of the repair shop. Fuller's efficient "heart" is your guarantee of economical and dependable service.

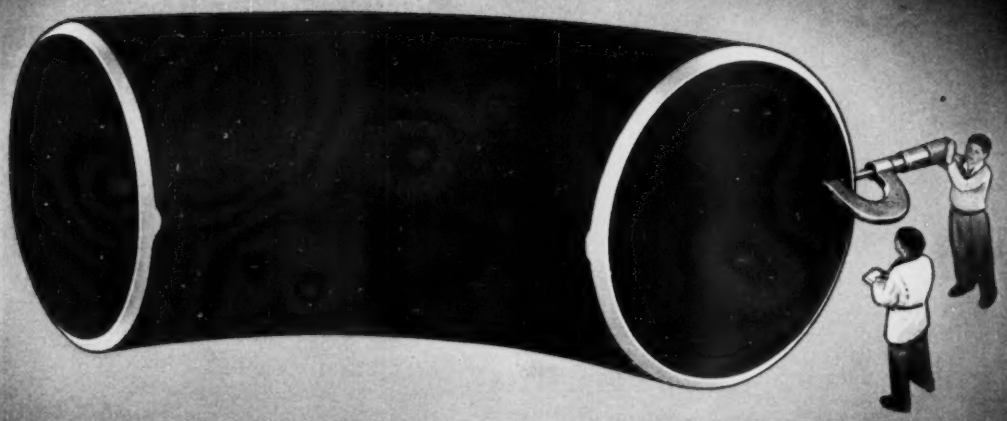
These are some of the important advantages of the Fuller Rotary—the reasons why thousands of these compressors are quietly and efficiently working for industry today: steady flow—no air-line pulsations, no valves to leak, direct drive from electric motor or internal combustion engine, simple foundation and small floor space, **maintained** capacity and efficiency for the life of the machine.

Whether your requirements call for a single-stage, two-stage or duplex combination, Fuller has the compressor **(to 125 psi. and 3300 cfm)** that will do the job better—longer. Investigate the Fuller Rotary Compressor. Complete information is given in Bulletin C-5. It's yours for the asking.

Fuller

DRY MATERIAL CONVEYING SYSTEMS
AND COOLERS • COMPRESSORS AND VACUUM PUMPS
FEEDERS AND ASSOCIATED EQUIPMENT

FULLER COMPANY
Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.



REGARDLESS OF SIZE . . . they must have *Dimensional Accuracy*

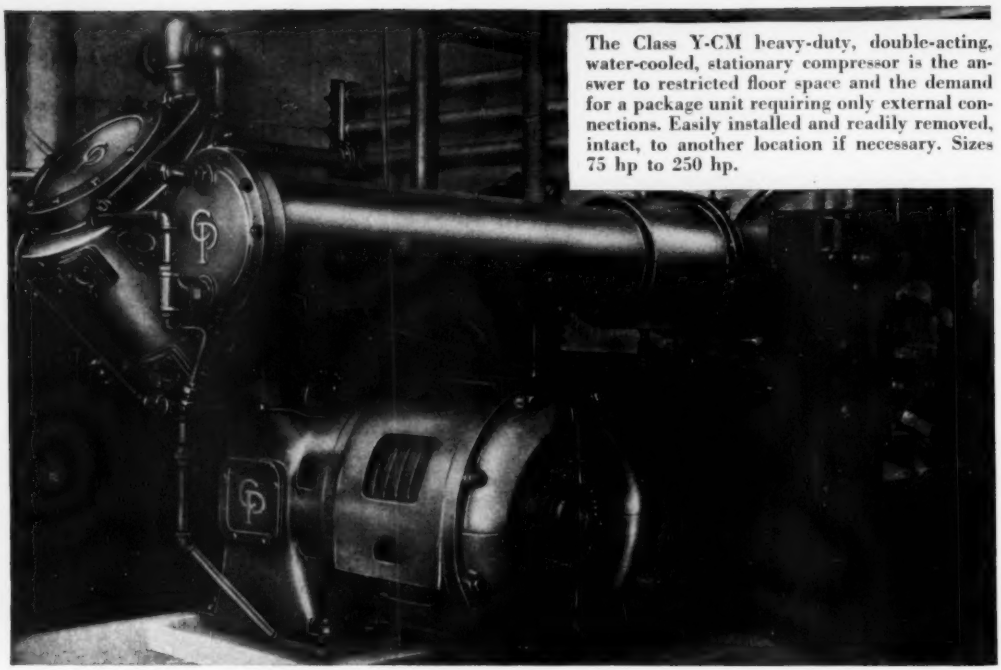
This photographic fantasy is simply to emphasize the exceptional dimensional accuracy and uniformity of Midwest Welding Fittings. Dimensional accuracy makes for easier welding and reduces [illegible]

MIDWEST
PIPING & SUPPLY CO., Inc.

Main Office: 1450 South Second Street, St. Louis 4, Mo.
Plants: St. Louis, Passaic, Los Angeles and Boston
Sales Offices: New York 7—50 Church St. • Chicago 3—79 West Monroe St.
Los Angeles 33—520 Anderson St. • Houston 2—1213 Capitol Ave.
Tulsa 3—224 Wright Bldg. • Boston 27—426 First St.
STOCKING DISTRIBUTORS IN PRINCIPAL CITIES

MIDWEST WELDING FITTINGS IMPROVE PIPING DESIGN AND REDUCE COSTS

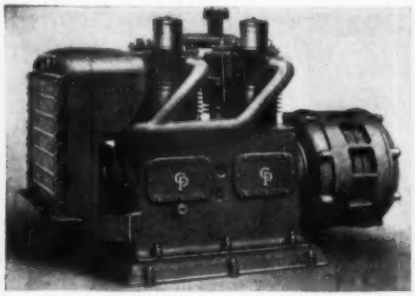
9743



The Class Y-CM heavy-duty, double-acting, water-cooled, stationary compressor is the answer to restricted floor space and the demand for a package unit requiring only external connections. Easily installed and readily removed, intact, to another location if necessary. Sizes 75 hp to 250 hp.

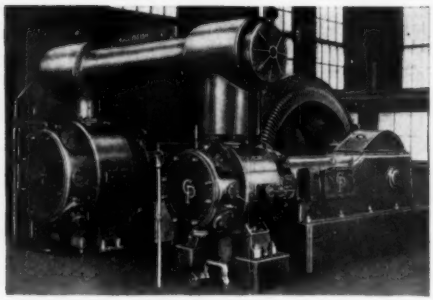
dependable, low maintenance compressors

from 7½ hp to 2000 hp



The small, compact, two-stage Class PM compressor—air-cooled for all-weather operation—may be installed independently of main air system. Also suitable for off-hour operations. Sizes from 25 hp to 100 hp. Available with built-in motor, flexible coupling or V-belt drive.

Write for further information on these and other types of CP Stationary Compressors.

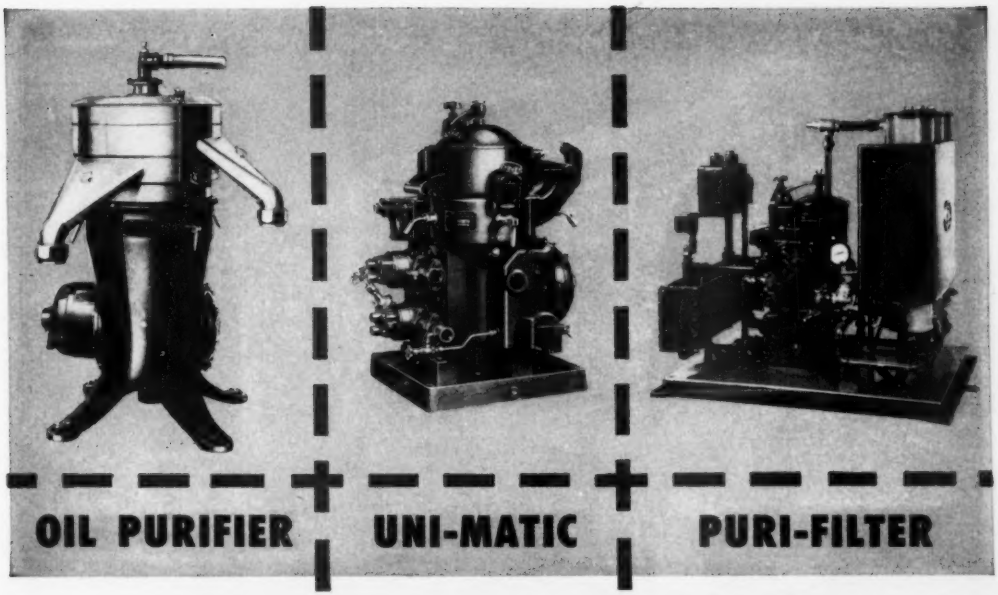


Built in the larger sizes — up to 2000 hp, Class O-CE horizontal duplex motor-driven compressors meet all load demands most economically, and "last forever."

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES



WHICH ONE?

De Laval Oil Purifiers are supplied in types and sizes for every plant need. ***All*** types . . . straight Oil Purifier . . . "Uni-Matic" Oil Purifier . . . or "Puri-Filter" . . . perform the same basic function equally well — they all throw out of the oil by means of centrifugal force, all solid and liquid impurities. But each machine has its place.

The straight Oil Purifier is used where it is desirable to install separate pumps to carry the oil to and from the purifier. This type of De Laval machine comes in the widest range of capacities, from 5 gph to 1800 gph dependent on the viscosity of the oil being purified.

The "Uni-Matic" is built with its own pumps. When necessary, a heater is also supplied. It is ready to operate as soon as it is piped up to the oil supply.

The "Puri-Filter" is a complete De Laval "Uni-Matic" plus a set of three or more filters. The filters remove colloidal carbon and other minute contaminants that get into diesel oil, or remove fly ash from turbine oil. Because it combines centrifugal force and micronic filtration, it leaves oil visibly clean—practically transparent. Its capacity depends on that of its basic unit —the De Laval "Uni-Matic" Oil Purifier.

THE DE LAVAL SEPARATOR COMPANY
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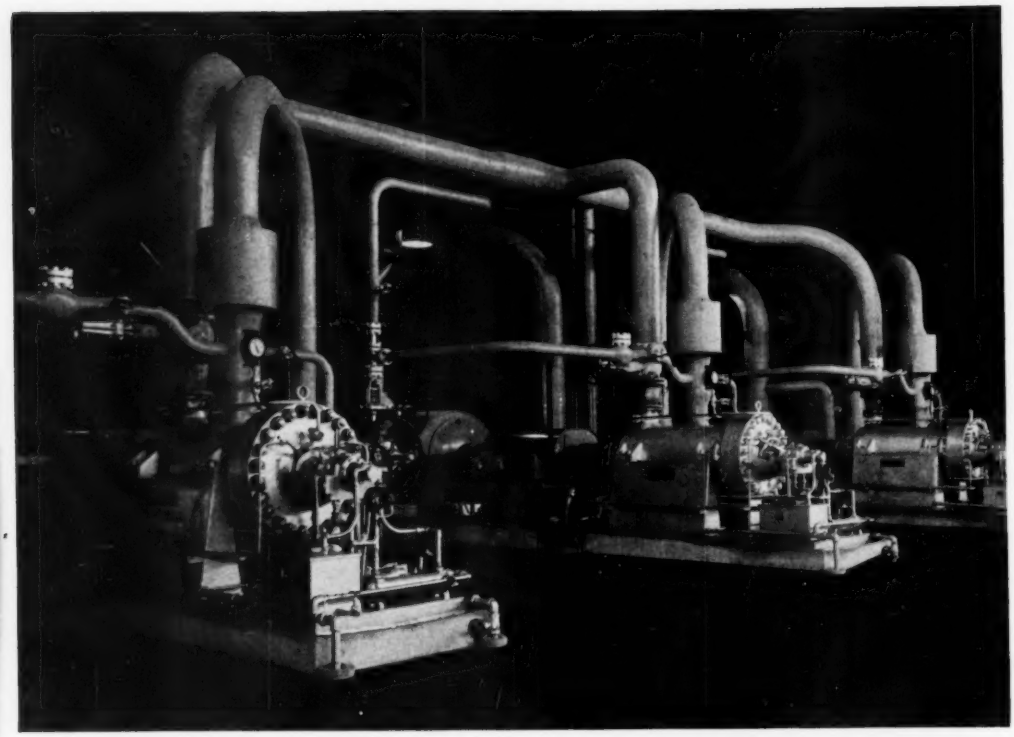

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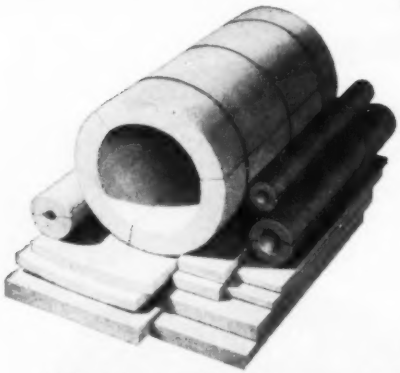

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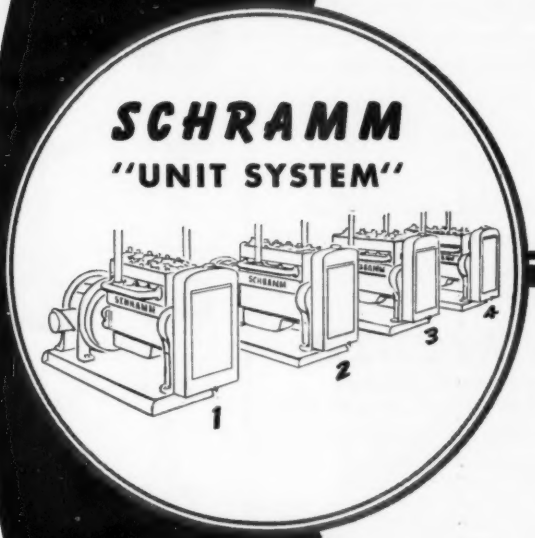

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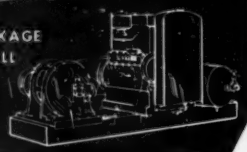

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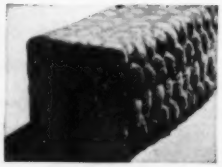

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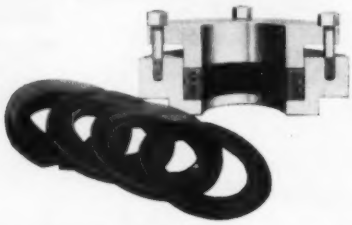

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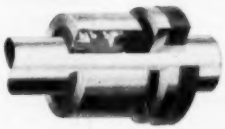

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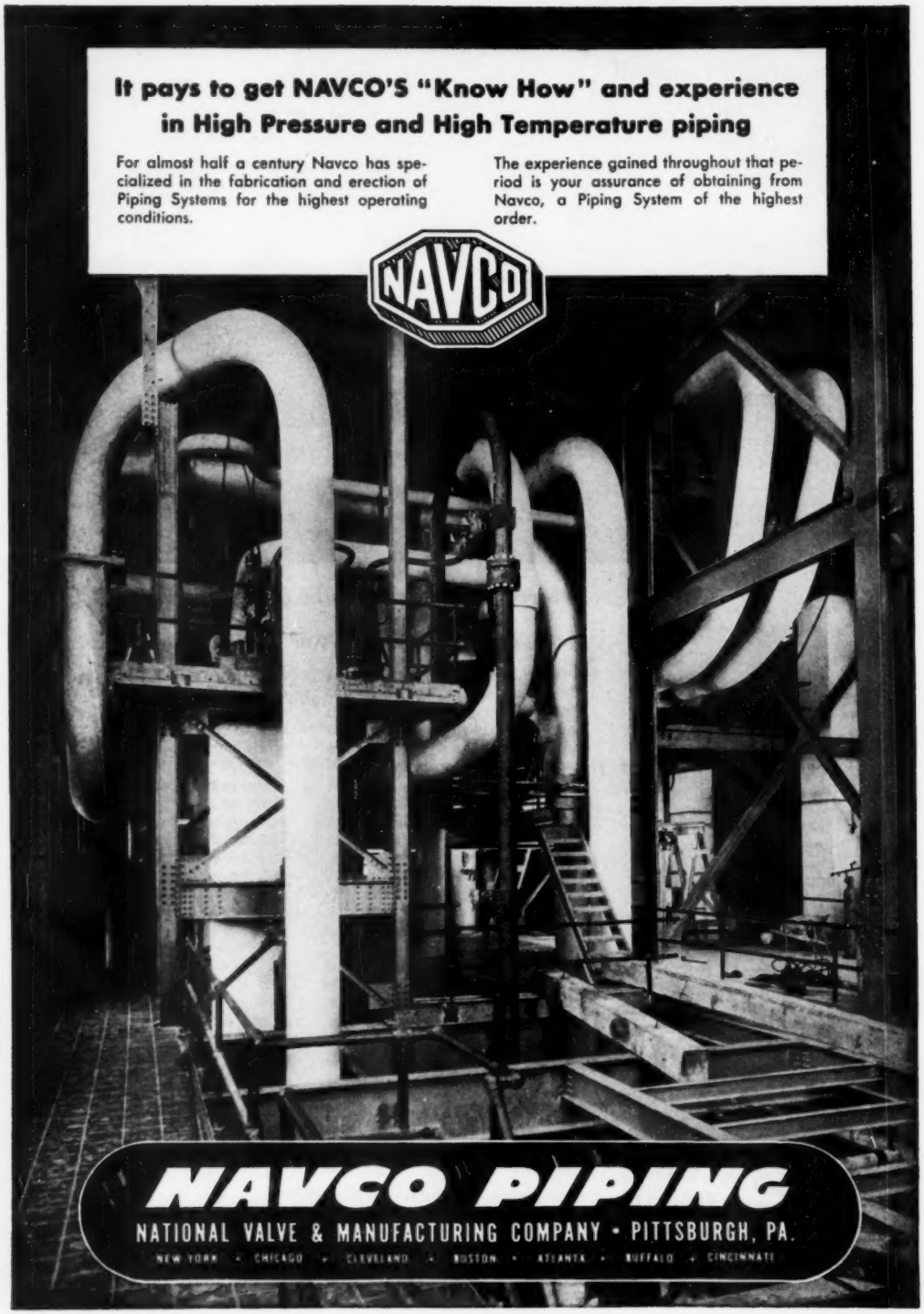
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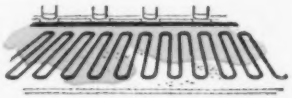
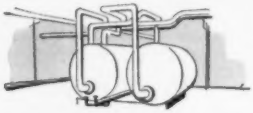
RADIANT HEATING

Genuine wrought iron is now serving in thousands of installations, of all sizes. The superior durability of the material is demonstrated by its comparative service in skating rinks—where conditions are even more severe.



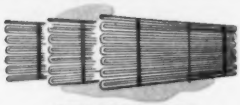
SNOW MELTING

Widely used not only because of its corrosion resistance, but because its mechanical strength protects it from crushing during installation and use.



STEAM RETURN LINES

Condensate is always aggressive. Genuine wrought iron return lines, properly installed, have proven remarkably effective in eliminating excessive repairs and replacements.



CONDENSERS

The extra long service life of genuine wrought iron makes it ideal for use in condensers. Direct comparison of service under identical conditions show that genuine wrought iron condensers usually last two to three times as long as low first-cost material.

AIR CONDITIONING

Many services are highly corrosive . . . and replacements are difficult and expensive. Genuine wrought iron has been used to safeguard operations in dozens of large installations.

UNDERGROUND LINES

Even in ordinary soil, corrosion is a hazard to underground lines. Genuine wrought iron provides a sound means of getting maximum life from every installation. User reports of 50 years service and more are not uncommon.

The corrosion resistance of genuine wrought iron comes from its unique composition and structure, which halts and disperses attack. Ask for bulletins on any services in which you are interested.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N. Y.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

YOUR BUYERS' GUIDE

OF POWER FIELD PRODUCTS

AND THE COMPANIES THAT MAKE THEM

Directory of Manufacturers

More than 1000 manufacturers of power field products have told us what they make. To use this directory, first look under the noun in the product heading; for example, if you're looking for safety valves, look under "Valves, Safety." Company names and addresses are listed alphabetically under each heading.

If you need information on equipment that may no longer be manufactured, check the Index to Former Manufacturers, which begins on page 117.

ABSORBERS, SHOCK
(See Dampers, Vibration)

ABSORPTION SYSTEMS, REFRIGERATION
American Solvent Recovery Corp, 8th & Cassady Aves, Columbus 3, Ohio
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Servel, Inc, 119 N Morton Ave, Evansville, Ind.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

ACCUMULATORS, REFRIGERATION
Frick Co, W Main St, Waynesboro, Pa.
Greer Hydraulics Inc, 454 18th St, Brooklyn, N. Y.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
McQuay Inc, 1600 Broadway St, N E, Minneapolis 13, Minn.
Murray, A B, Co, Inc, 608 Green Lane, Elizabeth, N. J.
Rempe Co, 340 N Sacramento Blvd, Chicago 12, Ill.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.

ACCUMULATORS, STEAM
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
General American Transportation Corp, 10 E 49 St, New York 17, N. Y.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Koven, L O & Brother, Inc, 154 Ogden Ave, Jersey City 7, N. J.

ADDITIVES, LUBRICANT
Acheson Colloids Co, Div Acheson Industries Inc, Port Huron, Mich.
Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Bakelite Co, 30 E 42nd St, New York 17, N. Y.
Disinfectol Co, 635 Lisbon Ave, Buffalo 15, N. Y.
Dow Corning Corp, Midland, Mich.
Drew, E F & Co Inc, 15 E 26th St, New York 10, N. Y.
du Pont de Nemours, E I & Co, Inc, Wilmington 98, Delaware
Koppers Co, Inc, Koppers Bldg, Pittsburgh 19, Pa.
Monsanto Chemical Co, 1700 S Second St, St Louis 4, Mo.
Pennsylvania Refining Co, 2686 Lisbon Rd, Cleveland 4, Ohio
Petroleum Solvents Corp, 231 Madison Ave, New York, N. Y.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

ADSORBERS, ODOR
American Solvent Recovery Corp, 8th & Cassady Aves, Columbus 3, Ohio
Conner, W B, Engrg Corp, Shelter Rock Lane, Danbury, Conn.
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Filtrol Corp, 634 S Spring St, Los Angeles 14, Calif.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Henszey Co, 202½ Water St, Watertown, Wis.
Research Products Co, Filter Div, 1015 E Washington Ave, Madison 10, Wis.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.

AFTERCOOLERS, AIR AND GAS
Adams, R P Co Inc, 327 E Park Dr, Buffalo 17, N. Y.
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Andale Co, 1604 Arch St, Philadelphia, Pa.
Bell & Gossett Co, 8200 N Austin Ave, Morton Grove, Ill.
Bethlehem Steel Co, Bethlehem, Pa.
Brown Fintube Co, Elyria, Ohio
Chicago Pneumatic Tool Co, 6 E 44th St, New York 17, N. Y.
Condenser Service & Engrg Co, 89 River St, Hoboken, N. J.
Davis Engrg Corp, 1044 E Grand St, Elizabeth 4, N. J.
Doyle & Roth Mfg Co, Ft of 23 St, Brooklyn, N. Y.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Griscom-Russel Co, Massillon, Ohio
Harrison Radiator Div, General Motors Corp, Lockport, N. Y.
Heat-X-Changer Co, Brewster, N. Y.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Modine Mfg Co, 1543 De Koven Ave, Racine, Wis.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Patterson-Kelley Co, Inc, 129 Burson St, East Stroudsburg, Pa.
Peabody Engrg Corp, 580 Fifth Ave, New York 19, N. Y.
Pennsylvania Pump & Compressor Co, P O Box 222, Easton, Pa.
Ross Heater & Mfg Co Inc, 1407 West Ave, Buffalo 13, N. Y.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Sims Co, 1402 E 18th St, Erie, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wilson Engrg Co, 122 S Michigan Ave, Chicago 3, Ill.
Worthington Corp, Harrison, N. J.
Young Radiator Co, 709 S Marquette St, Racine, Wis.

AIR COMPRESSORS
(See Compressors)

AIR CONDITIONERS, CENTRAL STATION
Air & Refrigeration Corp, 475 Fifth Ave, New York 17, N. Y.
Bahnson Co, 1001 S Marshall St, Winston-Salem, N. C.
Brunner Mfg Co, 1821 Broad St, Utica, N. Y.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Clarage Fan Co, North & Porter Sts, Kalamazoo 16, Mich.
Curtis Mfg Co, 1905 Kienlen Ave, St. Louis 20, Mo.
Frick Co, W Main St, Waynesboro, Pa.
General Electric Co, Air Conditioning Div, 5 Lawrence St, Bloomfield, N. J.
Hastings Air Conditioning Co, Inc, 108 S Colorado Ave, Hastings, Nebraska
Marlo Coil Co, 6135 Manchester, St. Louis 10, Mo.
McQuay Inc, 1600 Broadway St, N E, Minneapolis 13, Minn.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Ready Power Co, 11231 Freud Ave, Detroit, Mich.
Ross, J O Engrg Corp, 350 Madison Ave, New York 17, N. Y.
Surface Combustion Corp, 2375 Dorr St, Toledo 1, Ohio
Trane Co, LaCrosse, Wis.
U S Air Conditioning Corp, Como Ave SE at 33rd, Minneapolis 14, Minn.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Westinghouse Electric Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.
Young Radiator Co, 709 S Marquette St, Racine, Wis.

AIR CONDITIONERS, UNIT INTEGRAL COMPRESSOR
Brunner Mfg Co, 1821 Broad St, Utica, N. Y.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Curtis Mfg Co, 1905 Kienlen Ave, St. Louis 20, Mo.
Fedders-Quigan Corp, 57 Tonawanda St, Buffalo 7, N. Y.
Frick Co, W Main St, Waynesboro, Pa.
General Electric Co, Air Conditioning Div, 5 Lawrence St, Bloomfield, N. J.
McQuay, Inc, 1600 Broadway St, NE, Minneapolis 13, Minn.
Ready Power Co, 11231 Freud Ave, Detroit, Mich.
Trane Co, La Crosse, Wis.
U S Air Conditioning Corp, Como Ave SE at 33rd, Minneapolis 14, Minn.
Westinghouse Elec Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.
York Corp, York, Pa.

AIR CONDITIONERS, UNIT REMOTE COMPRESSOR
Bahnson Co, 1001 Marshall St, Winston-Salem, N. C.
Brunner Mfg Co, 1821 Broad St, Utica, N. Y.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Clarage Fan Co, North & Porter Sts, Kalamazoo 16, Mich.
Curtis Mfg Co, 1905 Kienlen Ave, St. Louis 20, Mo.
Frick Co, W Main St, Waynesboro, Pa.
General Electric Co, Air Conditioning Div, 5 Lawrence St, Bloomfield, N. J.
McQuay Inc, 1600 Broadway St, NE, Minneapolis 13, Minn.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Trane Co, LaCrosse, Wis.
U S Air Conditioning Corp, Como Ave, SE at 33rd, Minneapolis 14, Minn.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

AIR HEATERS
(See Preheaters, Air)

ALARMS, BEARING-TEMPERATURE
Bristol Co, Waterbury 20, Conn.
Edison, Thomas A Inc, Instrument Div, 41 Lakeside Ave, West Orange 3, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

ALARMS, FLAME-FAILURE
Autocall Co, 1047 Warden Ave, Shelby, Ohio
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Combustion Control Corp, 77 Broadway, Cambridge 42, Mass.
Ess Instrument Co, 96 S Washington Ave, Bergenfield, N. J.
Fenwal Inc, 240 Pleasant St, Ashland, Mass.
Lumenite Electronic Co, 407 S Dearborn St, Chicago 5, Ill.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26

ALARMS, FLOW
Autocall Co, 1047 Warden Ave, Shelby, Ohio
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Brooks Rotameter Co, Box 432, Lansdale, Pa.
Central Automatic Sprinkler Co, 4th & Cannon Ave, Lansdale, Pa.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Hays Corp, Michigan City 23, Ind.
Magnetrol Inc, 2110 S Marshall Blvd, Chicago 23, Ill.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago
Richardson Scale Co, Clifton, N. J.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Stock Equip Co, 745 P Hanna Bldg, Cleveland 15, Ohio

ALARMS, LIQUID LEVEL
Autocall Co, 1047 Warden Ave, Shelby, Ohio
Automatic Control Co, 1005 University Ave, St. Paul 4, Minn.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla.
Combustion Control Corp, 77 Broadway, Cambridge 42, Mass.
Cutler-Hammer Inc, 294 N 12th # St, Milwaukee 1, Wis.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Diamond Power Specialty Corp, Lancaster, Ohio
Ess Instrument Co, 96 S Washington Ave, Bergenfield, N. J.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Inferno Co, 115 Ricou St, Shreveport, La.
Jerguson Gage & Valve Co, 87 Fellsway, Somerville, Mass.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Lumenite Electronic Co, 407 S Dearborn St, Chicago 5, Ill.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.
Magnetrol Inc, 2110 S Marshall Blvd, Chicago 23, Ill.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Milton Roy Co, 1305 E Mermaid Lane, Philadelphia 18, Pa.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Northern Equipment Div, Continental Foundry & Machine Co, 939 W 26th St, Erie, Pa.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
Penn Industrial Instr Corp, 4110 Haverford Ave, Philadelphia 4, Pa.
Photoswitch Inc, 77 Broadway, Cambridge 42, Mass.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Reliance Gauge Column Co, 5902 Carnegie Ave, Cleveland 3, Ohio
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Schaub, Fred H Engrg Co, 2110 S Marshall Blvd, Chicago 23, Ill.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.
Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

ALARMS, PRESSURE, TEMPERATURE
Autocall Co, 1047 Warden Ave, Shelby, Ohio
Automatic Control Co, 1005 University Ave, St. Paul 4, Minn.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Burling Instrument Co, 5 Vose Ave, South Orange, N. J.
Cameron Iron Works, P O Box 1212, Houston, Texas
Edison, Thomas A, Inc, Instrument Div, 41 Lakeside Ave, West Orange 3, N. J.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Fenwal Inc, 240 Pleasant St, Ashland, Mass.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
Lonergan, J E Co, 209 Race St, Phila 6, Pa.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
Penn Industrial Instr Co, 4110 Haverford Ave, Philadelphia 4, Pa.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.

Synchro-Start Products, Inc, 8151 Ridgway, Skokie, Ill.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

ALGICIDES

Betz, W H & L D, Gillingham & Worth Sts, Phila 24, Pa.
Drew, E F, & Co, Inc, 15 E 26th St, New York 10, N. Y.
Inertol Co, Inc, 480 Frelinghuysen Ave, Newark 5, N. J.
Kelite Products, Inc, Box 2917 Terminal Annex, Los Angeles, Calif.
Monsanto Chemical Co, 1700 S Second St, St. Louis 4, Mo.
National Aluminate Corp, 6246 W 66th Place, Chicago 38, Ill.
Polyphase Chemical Service, Inc, 150 Nassau St, New York 38, N. Y.
Western Chemical Co, 713-15 Washington St, Kansas City 5, Mo.

ALLOYING MATERIALS

Aluminum Co of America, Dept 11, 670 Gulf Bldg, Pittsburgh 19, Pa.
Bridgeport Brass Co, 30 Grand St, Bridgeport 2, Conn.
Coast Metals, Inc, Little Ferry, N. J.
du Pont de Nemours, E I & Co, Inc, Wilmington 98, Del.
Electro Alloys Div, American Brake Shoe, Elyria, Ohio
Electro Metallurgical Co, 30 E 42nd St, New York 17, N. Y.
International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.
Mallory, P R & Co, 3029 E Washington St, Indianapolis 6, Ind.
Monsanto Chemical Co, 1700 S Second St, St. Louis 4, Mo.

AMMETERS, INDICATING

Beckman Instruments Inc, 820 Mission St, South Pasadena, Calif.
Burlington Instrument Co, 203 N 3rd St, Burlington, Iowa
Columbia Electric Mfg Co, 4519 Hamilton Ave, Cleveland 14, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Marion Electrical Instrument Co, Stark Street Gate, Manchester, N. H.
Pyramid Instrument Corp, 630 Merrick Road, Lynbrook, N. Y.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Sensitive Research Instrument Co, 9-11 Elm Ave, Mt. Vernon, N. Y.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Sticht, Herman H Co, 27 Park Place, New York 7, N. Y.
U S Gauge Div, American Machine & Metals, Sellersville, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

AMMETERS, RECORDING

Bristol Co, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Esterline-Angus Co, 1201 Main St, Indianapolis 6, Ind.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

ANALYZERS, CO_2, PORTABLE

Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.
Burrell Corp, 2223 Fifth Ave, Pittsburgh 19, Pa.
Cambridge Instr Co, 3007 Grand Central Terminal, New York 17, N. Y.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Dwyer, F W, Mfg Co, 217 S Western Ave, Chicago, Ill.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Engelhard, Charles, Inc, 900 Passaic Ave, East Newark, N. J.
Hays Corp, Michigan City 23, Ind.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.

ANCHORS, PIPE

(See Hangers, Pipe)

ANALYZERS, VIBRATION

General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

ANODES, ANTI-CORROSION

Electromatic Water Treatment Inc, 475 Fifth Ave, New York, N. Y.
Federated Metals Div, American Smelting & Refining, 120 Broadway, N. Y., N. Y.
Revere Copper & Brass, Inc, 230 Park Ave, New York 17, N. Y.
St Joseph Lead Co 250 Park Ave, New York, N. Y.

ANTI-FOAMS, BOILER WATER

Drew, E F & Co, Inc, 15 E 26th St, New York 10, N. Y.
National Aluminate Corp, 6246 W 66th Place, Chicago 38, Ill.

ARCHES, FURNACE SUSPENDED

American Arch Co, Inc, 60 E 42nd St, New York 17, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York, N. Y.
Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 8, Mich.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detrick, M H Co, 111 W Washington St, Chicago 2, Ill.
Harbison-Walker Refractories Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Laclede Christy Co, 812 Olive St, St. Louis, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Wickes Boiler Co, 512 N Water St, Saginaw, Mich.

ASH-HANDLING EQUIPMENT

(See Conveyors, Silos, Sluices)

ASBESTOS PRODUCTS

Carey, Philip Mfg Co, Wayne at Cooper, Cincinnati 15, Ohio
Collins Packing Co Inc, 401 N Broad St, Philadelphia 8, Pa.
Darcold Co, Inc, 145 Sixth Ave, New York 13, N. Y.
Ehret Magnesia Mfg Co, Valley Forge, Pa.
Eureka Packing Co, 294-296 46th St, Brooklyn 20, N. Y.
Felt Products Mfg Co, 1511 Carroll Ave, Chicago 7, Ill.
Flexrock Co, 3677 Filbert St, Philadelphia 4, Pa.
Flintkote Co, 30 Rockefeller Plaza, New York 20, N. Y.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Johns-Manville, 22 East 40th St, New York 16, N. Y.
Keasbey & Mattison Co, Butler Ave, Ambler, Pa.
Marlo Co, Inc, 434 Broadway, New York 13, N. Y.
Mundet Cork Corp, 7101 Tonnelle Ave, North Bergen, N. J.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh 19, Pa.
Pabco Products, Inc, 475 Brannan St, San Francisco 19, Calif.
Porter, H W & Co, Inc, 825 Frelinghuysen Ave, Newark 5, N. J.
Quigley Co, Inc, 527 Fifth Ave, New York 27, N. Y.
Raybestos-Manhattan Inc, Packing Div, Manheim, Pa.
Reflectal Corp, 155 E 44th St, New York 17, N. Y.
Ruberoid Co, 500 Fifth Ave, New York 18, N. Y.
Standard Asbestos Mfg Co, 860 W Evergreen Ave, Chicago 22, Ill.
Union Asbestos & Rubber Co, Dept 1819, 332 S Michigan Ave, Chicago 4, Ill.
U S Gasket Co, 602 N 10th St, Camden, N. J.

BAFFLES, BOILER

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Botfield Refractories Co, Swanson & Clymer Sts, Phila 47, Pa.
Carborundum Co, Perth Amboy, N. J.
Carolina Refractories Co, Hartsville, S. C.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Engineer Co, 75 West St, New York 6, N. Y.
Gladding, McBean & Co, 2901 Los Feliz Blvd, Los Angeles, Calif.
Green, A P, Fire Brick Co, Mexico, Mo.
Harbison-Walker Refractories Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Power Plant Efficiency Co, P O Box 592, 901 E Maryland St, Indianapolis 4, Ind.
Quigley Co, Inc, 527 Fifth Ave, New York, N. Y.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Reintjes, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Smith Refractories, Sanford C, 1713 Niagara St, Buffalo, N. Y.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Waite Construction Co, 111 Westminster St, Providence 3, R. I.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BAROMETRIC CONDENSERS

(See Condensers, Barometric, Jet)

BASES, MOTOR

American Pulley Co, 4200 Wissahickon Ave, Phila 29, Pa.
Automatic Motor Base Co, P O Box 2186, Paterson, N. J.
Bond, Charles, Co, 617-623 Arch St, Philadelphia 6, Pa.
Chicago Belting Co, 125 N Green St, Chicago 7, Ill.
Cork Import Corp, 1 Engle St, Englewood, N. J.
Electric Machy Mfg Co, 1331 NE Tyler St, Minneapolis 13, Minn.
General Eletcric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Nazareth Steel Fabricators Inc, Nazareth, Pa.
Philadelphia Gear Works Inc, G St & Erie Ave, Philadelphia 34, Pa.
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, Ohio
Rockwood Mfg Co, Inc, 1801 English Ave, Indianapolis 6, Ind.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

BATTERIES, STORAGE

Electric Storage Battery Co, 42 S 15th St, Philadelphia 2, Pa.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Goodrich, B F Co, Akron, Ohio
Gould National Batteries Inc, 467 Calhoun St, Trenton 7, N. J.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Nickel Cadmium Battery Corp, Pleasant St, Easthampton, Mass.

BEARINGS, ANTI-FRICTION

Ahlberg Bearing Co, 3025 W 47th St, Chicago 32, Ill.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Bond, Charles, Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Gear Works, 14 Hayward St, Quincy 71, Mass.
Division Lead Co, 836 W Kinzie St, Chicago 22, Ill.
Dodge Mfg Corp, Mishawaka, Ind.
Fafnir Bearing Co, 37 Booth St, New Britain, Conn.
Federal Bearing Co, Fairview Ave, Poughkeepsie, N. Y.
Gwilliam Co, 360 Furman St, Brooklyn 2, N. Y.
Heacon, Inc, 1033-A Broad Street Station Bldg, Philadelphia 3, Pa.
Hunt, Rodney, Machine Co, Orange, Mass.
Hyatt Bearing Div, General Motors Corp, Harrison, N. J.
Jones, W A, Foundry & Machine Co, 4401 Roosevelt Rd, Chicago 24, Ill.
Link-Belt Co, Belt & Roller Div, 519 N Holmes Ave, Indianapolis 6, Ind.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Marlin-Rockwell Corp, 402 Chandler St, Jamestown, N. Y.
New Departure Div, General Motors Corp, Bristol, Conn.
Norma-Hoffmann Bearings Corp, Stamford, Conn.
Orange Roller Bearing Co, 557 Main St, Orange, N. J.
Rollway Bearing Co Inc, 541 Seymour St, Syracuse 4, N. Y.
S K F Industries, Inc, Front St & Erie Ave, Philadelphia 32, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Timken Roller Bearing Co, 1835 Deuber Ave, SW, Canton 6, Ohio
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wood's, T B Sons Co, Fifth Ave, Chambersburg, Pa.

BEARINGS, OILLESS

Bearium Metals Corp, 268 State St, Rochester 4, N. Y.
Bond, Charles Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Gear Wks, 14 Hayward St, Quincy 71, Mass.
Bunting Brass & Bronze Co, 715 Spencer St, Toledo 9, Ohio
Dodge Mfg Corp, Mishawaka, Ind.
Dick, R & J Co Inc, 28 Sade St, Passaic, N. J.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
National Carbon Co, 30 E 42nd St, New York 17, N. Y.
Pure Carbon Co, 441 Hall Ave, St. Mary's, Pa.
Raybestos-Manhattan, Inc, 61 Willett St, Passaic, N. J.

BEARINGS, SLEEVE

American Crucible Products Co, Lorain, Ohio
Ampco Metal Inc, 1701 S 38th St, Milwaukee 4, Wis.
Bearium Metals Corp, 268 State St, Rochester 4, N. Y.
Bond, Charles, Co, 617-623 Arch St, Philadelphia 6, Pa.
Bunting Brass & Bronze Co, 715 Spencer St, Toledo 9, Ohio
Cleveland Graphite Bronze Co, 6545 Carnegie Ave, Cleveland, Ohio
Dodge Mfg Corp, Mishawaka, Ind.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Green Fuel Economizer Co Inc, 627 Main St, Beacon, N. Y.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas
Pure Carbon Co, 441 Hall Ave, St. Mary's, Pa.

BEARINGS, THRUST

Ahlberg Bearing Co, 3025 W 47 St, Chicago 32, Ill.
American Crucible Products Co, Lorain, Ohio
Bond, Charles, Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Gear Wks, 14 Hayward St, Quincy 71, Mass.
Bunting Brass & Bronze Co, 715 Spencer St, Toledo 9, Ohio
Continental Gin Co, 4500 5th Ave S, Birmingham 2, Ala.
Fafnir Bearing Co, 37 Booth St, New Britain, Conn.
Federal Bearing Co, Fairview Ave, Poughkeepsie, N. Y.
Gwilliam Co, 360 Furman St, Brooklyn 2, N. Y.
Hunt, Rodney, Machine Co, Orange, Mass.
Link-Belt Co, Belt & Roller Bearings Div, 519 N Holmes Ave, Indianapolis 6, Ind.

Marlin-Rockwell Corp, 402 Chandler St, Jamestown, N. Y.
Orange Roller Bearing Co, 557 Main St, Orange, N. J.
Pure Carbon Co, 441 Hall Ave, St. Mary's, Pa.
Rollway Bearing Co, Inc, 541 Seymour St, Syracuse 4, N. Y.
S K F Industries, Inc, Front St & Erie Ave, Philadelphia 32, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Timken Roller Bearing Co, 1835 Deuber Ave, SW, Canton 6, Ohio

BELLOWS, METAL

Flexonics Corp, formerly Chicago Metal Hose Corp, 1315 S Third Ave, Maywood, Ill.
Fulton Sylphon Co, Knoxville 15, Tenn.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.

BELTING, BALATA

Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Manheim Mfg & Belting Co, Manheim, Pa.

BELTING, CANVAS

Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Goodall Rubber Co, Whitehead Rd, Trenton 4, N. J.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Raniville, F Co, 241-251 Pearl St, NW, Grand Rapids 2, Mich.
Russell Mfg Co, Middletown, Conn.

BELTING, CONVEYOR

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Cincinnati Rubber Mfg Co, Franklin Ave, Cincinnati 12, Ohio
Colorado Fuel & Iron Corp, Continental Oil Bldg, Denver 1, Colo.
Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Goodrich, B F, Co, Akron, Ohio
Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Hewitt Rubber Div, Hewitt-Robins Inc, 240 Kensington Ave, Buffalo 5, N. Y.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Philadelphia 24, Pa.
Raybestos-Manhattan Inc, 61 Willett St, Passaic, N. J.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Russell Mfg Co, Middletown, Conn.
Thermoid Co, Trenton, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

BELTING, ELEVATOR

Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Cincinnati Rubber Mfg Co, Franklin Ave, Cincinnati 12, Ohio
Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Goodall Rubber Co, Whitehead Rd, Trenton 4, N. J.
Goodrich, B F, Co, Akron, Ohio
Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Hewitt Rubber Div, Hewitt-Robins Inc, 240 Kensington Ave, Buffalo 5, N. Y.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Philadelphia 24, Pa.
Raybestos-Manhattan Inc, 61 Willett St, Passaic, N. J.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Russell Mfg Co, Middletown, Conn.
Thermoid Co, Trenton, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

BELTING, LEATHER

Alexander Bros, 406 N 3rd St, Phila 7, Pa.
Baldwin Belting Inc, 74-76 Murray St, New York 7, N. Y.
Bond, Charles Co, 617-623 Arch St, Philadelphia 6, Pa.
Chicago Belting Co, 125 N Green St, Chicago 7, Ill.
Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Fisher Leather Belting Co Inc, 325 N Third St, Phila 6, Pa.
Graton & Knight Co, 356 Franklin St, Worcester 4, Mass.
Houghton, E F & Co, 303 W Lehigh Ave, Phila 33, Pa.
Rhoads, J E & Sons, 35 N 6th St, Philadelphia 6, Pa.
Schieren, Chas A Co, 30 Ferry St, New York 38, N. Y.
Sudbury Laboratory, South Sudbury, Mass.
Whiting Leather & Belting Co, 9 Murray St, New York 7, N. Y.
Williams, I B, & Sons, 51 Washington St, Dover, N. H.

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Barber-Greene Co, Aurora, Ill.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Gates Rubber Co, 999 S Broadway, Denver 17, Colo.
Gilmer, L H Div of U S Rubber Co, Tacony, Philadelphia 35, Pa.
Goodall Rubber Co, Whitehead Rd, Trenton 4, N. J.
Goodrich, B F, Co, Akron, Ohio
Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Hewitt Rubber Div, Hewitt-Robins Inc, 240 Kensington Ave, Buffalo 5, N. Y.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Philadelphia 24, Pa.
Raybestos-Manhattan Inc, 61 Willett St, Passaic, N. J.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Rockwood Mfg Co Inc, 1801 English Ave, Indianapolis 6, Ind.
Russell Mfg Co, Middletown, Conn.
Schieren, Chas A Co, 30 Ferry St, New York 38, N. Y.
Thermoid Co, Trenton, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

BELTS, "V"

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
American Pulley Co, 4200 Wissahickon Ave, Phila 29, Pa.
Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Baldwin Belting Inc, 74-76 Murray St, New York 7, N. Y.
Bond, Charles Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Chicago Belting Co, 125 N Green St, Chicago 7, Ill.
Collins Packing Co Inc, 401 N Broad St, Philadelphia 8, Pa.
Darcold Co Inc, 145 Sixth Ave, New York 13, N. Y.
Dayton Rubber Co, 2342 W Riverview Ave, Dayton 1, Ohio
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Dodge Mfg Corp, Mishawaka, Ind.
Gates Rubber Co, 999 S Broadway, Denver 17, Colo.
Gilmer, L H, Div of U S Rubber Co, Tacony, Philadelphia 35, Pa.
Goodrich, B F, Co, Akron, Ohio
Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Manheim Mfg & Belting Co, Manheim, Pa.
Medart Co, 100 Potomac St, St. Louis 18, Mo.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Philadelphia 24, Pa.
Raybestos-Manhattan Inc, 61 Willett St, Passaic, N. J.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Rhoads, J E & Sons, 35 N 6th St, Philadelphia 6, Pa.
Rockwood Mfg Co, Inc, 1801 English Ave, Indianapolis 6, Ind.
Schieren, Chas A Co, 30 Ferry St, New York 38, N. Y.
Thermoid Co, Trenton, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.
Williams, I B & Sons, 51 Washington St, Dover, N. H.
Wood's, T B Sons Co, Fifth Ave, Chambersburg, Pa.
Worthington Corp, Harrison, N. J.

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American Pipe Bending Machine Co, 99 Furnace St, Poultney, Vt.
Appleton Electric Co, 1701-41 Wellington Ave, Chicago 13, Ill.
Atlantic Pipe Bending & Fabricating Co, River Road, Edgewater, N. J.
Blackhawk Mfg Co, 5325 W Rogers St, Milwaukee 1, Wis.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Greenlee Tool Co, 2136 Twelfth St, Rockford, Ill.
Leibfried, C H, Mfg Corp, 95-101 Guernsey St, Brooklyn, N. Y.
National Pipe Bending Co, 114 River St, New Haven 13, Conn.
Parker Appliance Co, 17325 Euclid Ave, Cleveland 12, Ohio
Steel & Tubes Div, Republic Steel Corp, 212 E 131st St, Cleveland 8, Ohio
Tal Bender, Inc, 417 N Water St, Milwaukee 2, Wis.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.

BLOCKS, PILLOW

Ahlberg Bearing Co, 3025 W 47th St, Chicago 32, Ill.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Bond, Charles, Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Gear Wks, 14 Hayward St, Quincy 71, Mass.
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Continental Gin Co, 4500 S 5th Ave, Birmingham 2, Ala.
Dick, R & J Co, Inc, 28 Sade St, Passaic, N. J.
Dodge Mfg Corp, Mishawaka, Ind.
Fafnir Bearing Co, 37 Booth St, New Britain, Conn.
Green Fuel Economizer Co Inc, 627 Main St, Beacon, N. Y.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Jones, W A Foundry & Machine Co, 4401 Roosevelt Rd, Chicago 24, Ill.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Link-Belt Co, Belt & Roller Bearing Div, 519 N Holmes Ave, Indianapolis 6, Ind.
Link-Belt Co, 300 W Pershing Rd, Chicago 9, Ill.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas
Nazareth Steel Fabricators, Inc, Nazareth, Pa.
Palmer-Bee Co, 1710 Poland Ave, Detroit 12, Mich.
Robins Conveyors Div, Hewitt-Robins Inc, 270 Passaic Ave, Passaic, N. J.
Standard Pressed Steel Co, Jenkintown, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Wilmot Engrg Co, Hazleton, Pa.
Wood's, T B Sons Co, Fifth Ave, Chambersburg, Pa.

BLOWDOWN SYSTEMS, BOILER, CONTINUOUS

Belco Industrial Equip Div Inc, 52 Iowa Ave, Paterson 3, N. J.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Drew, E F & Co Inc, 15 E 26th St, New York 10, N. Y.
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Stout, David & Sons, 7016 Manchester Blvd, St. Louis 17, Mo.
Uniblow Valve Co, 1920 W 77th, Cleveland, Ohio
Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.

BLOWERS, AXIAL, CENTRIFUGAL

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
American Blower Corp, Detroit 32, Mich.
Breuer Electric Mfg Co, 5100 N Ravenswood Ave, Chicago 40, Ill.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Campbell, E K, Co, 1809 Manchester Ave, Kansas City, Mo.
Chelsea Fan & Blower Co, Inc, 639 South Ave, Plainfield, N. J.
Clarage Fan Co, North & Porter Sts, Kalamazoo 16, Mich.
De Laval Steam Turbine Co, Trenton 2, N. J.
Eclipse Fuel Engr Co, 1029 Buchanan St, Rockford, Ill.
Elliott Co, Jeannette, Pa.
Fly Ash Arrestor Corp, P O Box 1883, Birmingham 1, Ala.
General Blower Co, 8610 Ferris Ave, Morton Grove, Ill.
Green Fuel Economizer Co Inc, 627 Main St, Beacon, N. Y.
Hartzell Propeller Fan Co, Downing St, Piqua, Ohio
Hastings Air Conditioning Co Inc, 108 S Colorado Ave, Hastings, Neb.
Ilg Electric Ventilation Co, 2850 N Crawford Ave, Chicago 41, Ill.
Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.
International Engrg Inc, P O Box 973, Dayton 1, Ohio
Lamson Corp, Lamson St, Syracuse 1, N. Y.
Moore Co, Marcelline, Mo.
Nelson, Herman Div, American Air Filter Co, 1824 3rd Ave, Moline, Ill.
Northern Blower Co, 6409 Barberton Ave, Cleveland 2, Ohio
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Read Standard Corp, Erie, Pa.
Roots-Connersville Blower Corp, 900 W Mount St, Connersville, Ind.
Spencer Turbine Co, 486 New Park Ave, Hartford 6, Conn.
U. S. Air Conditioning Corp, Como Ave SE at 33rd, Minneapolis 14, Minn.
U. S. Hoffman Machinery Corp, 105 4th Ave, New York, N. Y.
Westinghouse Electric Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.
Wing, L J, Mfg Co, 50 Vreeland Mills Rd, Linden, N. J.

BLOWERS, ROTARY

Breuer Electric Mfg Co, 5100 N Ravenswood Ave, Chicago 40, Ill.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Jenkins Conveyors Co, 614 Central Ave, East Orange, N. J.
Nelson, Herman, Div American Air Filter Co, 1824 3rd Ave, Moline, Ill.
Read Standard Corp, Erie, Pa.
Roots-Connersville Blower Corp, 900 W Mount St, Connersville, Ind.
Westinghouse Electric Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.

BLOWERS, SOOT

Bayer Co, 4030 Chouteau Ave, St Louis 10, Mo.
Boiler Equip Trust, Pelham, Mass.
Brunt Mfg Co, 60 S Division St, Buffalo 3, N. Y.
Clark Bros Co Inc, Olean, N. Y.
Copes-Vulcan Div, Continental Foundry & Machine Co, Erie, Pa.
Diamond Power Specialty Corp, Lancaster, Ohio
Hahn-Pitz Corp, 286 Scholes St, Brooklyn 6, N. Y.
Holub Industries, 413 Dekalb Ave, Sycamore, Ill.
Huyette, Paul B, Co, Inc, 401 N Broad St, Philadelphia 8, Pa.
Inferno Co, 115 Ricou St, Shreveport, La.
Lamson Corp, Lamson St, Syracuse 1, N. Y.
Marion Machine Foundry & Supply Co, Marion, Ind.
Robertson III, James L, Box 132, St George, Staten Island 1, N. Y.
Skilsaw Inc, 5033 N Elston Ave, Chicago 30, Ill.

BOARDS, ASBESTOS

Carey, Philip Mfg Co, Wayne at Cooper, Cincinnati 15, Ohio

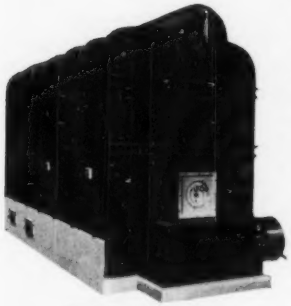
MURRAY IRON WORKS COMPANY

Burlington, Iowa, U. S. A.

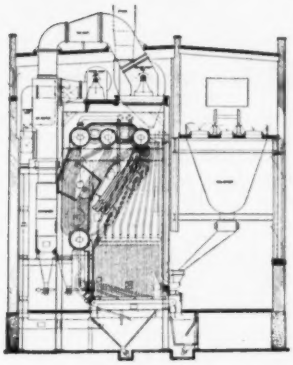
Steam Turbines, Boilers, Iron Castings

BOILERS

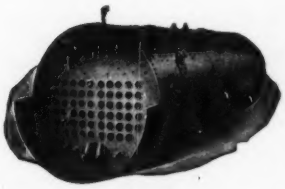
Longitudinal Drum Type "A" Boiler



Single Drum Water Tube Enclosed Boiler



4-Drum Type Steam Generator



Horizontal Return Tubular Boiler

For power and heating plants, Murray offers a wide selection of boilers. Water tube boilers are built in both straight and bent tube types. In the straight tube type, the Murray Type "A" longitudinal drum boiler has been eminently successful. Also available is the cross drum straight tube type.

Bent tube boilers are built with two, three or four drums. The four-drum bent tube type is designed primarily for the larger power installations, and may be furnished with double flow circulation. The three-drum bent tube is most commonly used in the low head construction, but also is designed for high setting. The two-drum bent tube type is used for both heating and power.

Water walls may be provided with either the straight tube or bent tube types.

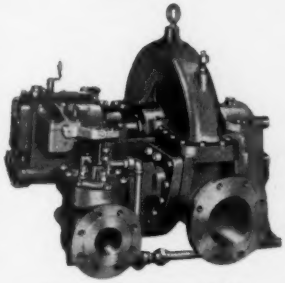
In fire tube boilers, Murray offers horizontal return tubulars, Scotch Marine, vertical, as well as an integral type of steel encased horizontal return tubular.

Murray steam turbines are quality prime movers for mechanical and electrical machinery. Types "H" and "U", single pressure stage velocity compounded, are furnished for direct drive or through Murray high-speed reduction gears for requirements from 10 to 2000 H.P., as well as for electric generators up to 200 K.W. Multi-stage impulse turbines "UV," "R" and "D," direct drive or geared, are furnished for mechanical applications up to 4000 H.P. and in turbo-generators up to 3000 K.W. A wide range of accessories is available for special requirements.

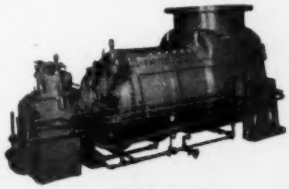
Turbo-generators of the most modern construction are available in geared combinations up to and including 1500 K.W. and in direct connected units from 500 to 3000 K.W. Rating.

Type "UV" turbines and turbo-generators may be furnished for operation on low pressure steam or as extraction, mixed pressure or extraction mixed pressure units.

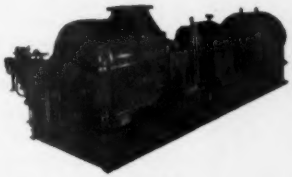
TURBINES



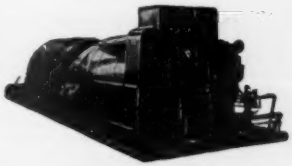
Type "H" Single Stage Turbine



Type "UV" Multi-Stage Turbine



500 K.W. Package Type Turbine Generator Set



2500 K.W. Turbo-Generator

advertised in this issue see advertisers' index pages 192-193

Ehret Magnesia Mfg Co, Valley Forge, Pa.
Felt Products Mfg Co, 1511 Carroll Ave, Chicago 7, Ill.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
Keasbey & Mattison Co, Butler Ave, Ambler, Pa.
Pabco Products Inc, 475 Brannan St, San Francisco 19, Calif.
Ruberoid Co, 500 Fifth Ave, New York 18, N. Y.

BOARDS, MINERAL WOOL

Ehret Magnesia Mfg Co, Valley Forge, Pa.
National Gypsum Co, 325 Delaware Ave, Buffalo 2, N. Y.
Owens-Corning Fiberglas Corp, Wayne Bldg, Toledo 1, Ohio
Pabco Products Inc, 475 Brannan St, San Francisco 19, Calif.
Standard Asbestos Mfg Co, 860 W Evergreen Ave, Chicago 22, Ill.

BOILER COMPOUNDS

(See Water Treatment, Boiler, Internal)

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Hynes Elec Heating & Process Div, 1815 W Sedgley Ave, Phila, Pa.
Livingstone Engrg Co, 100 Grove St, Worcester 5, Mass.

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Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Doyle & Roth Mfg Co, Ft. of 23 St, Brooklyn, N. Y.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Kennedy-Van Saun Mfg & Engrg Co, 2 Park Ave, N. Y. 16, N. Y.
Maxim Silencer Co, 85 Homestead Ave, Hartford 1, Conn.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Sims Co, 1402 E 18th St, Erie, Pa.

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Alert Boiler & Mfg Co, 315 W Woodbridge St, Detroit 26, Mich.
Ames Iron Wks, Oswego, N. Y.
Babcock & Wilcox, 161 E 42nd St, New York 17, N. Y.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave, S E, Minneapolis 14, Minn.
Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Cleaver-Brooks Co, 326 E Keefe Ave, Milwaukee 12, Wis.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crotty Mfg Corp, 133-15 35th Ave, Flushing, N. Y.
Cyclotherm Div, U. S. Radiator Corp, 157 E First St, Oswego, N. Y.
Eclipse Fuel Eng Co, 1029 Buchanan St, Rockford, Ill.
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Johnson Burner Co, S T, 940 Arlington Ave, Oakland 8, Calif.
Johnston Bros Inc, Ferrysburg, Mich.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
International Boiler Wks Co, 1 Birch St, East Stroudsburg, Pa.
Kewanee Boiler Corp, Franklin St & "Q" Tracks, Kewanee, Ill.
Leffel, James & Co, 426 East St, Springfield, Ohio
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Mund Boilers, Inc, 1600 N Indiana St, Los Angeles 33, Calif.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Stout, David, & Sons, 7016 Manchester Blvd, St Louis 17, Mo.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BOILERS, SELF-CONTAINED, PACKAGED TYPE

Alert Boiler & Mfg Co, 315 W Woodbridge St, Detroit 26, Mich.
Ames Iron Wks, Oswego, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Besler Corp, 4053 Harlan St, Emeryville 8, Calif.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave SE, Minneapolis 14, Minn.
Clayton Mfg Co, P O Box 550, El Monte, Calif.
Cleaver-Brooks Co, 326 E Keefe Ave, Milwaukee 12, Wis.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Cyclotherm Div, U. S. Radiator Corp, 157 E First St, Oswego, N. Y.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Del.
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
International Boiler Wks Co, 1 Birch St, East Stroudsburg, Pa.
Johnson Burner Co, S T, 940 Arlington Ave, Oakland 8, Calif.
Johnston Bros Inc, Ferrysburg, Mich.
Keeler, E, Co, 238 West St, Williamsport 3, Pa.
Leffel, James & Co, 426 East St, Springfield, Ohio
Martin, J O & C U, 637 Minna St, San Francisco 3, Calif.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Mund Boilers, Inc, 1600 N Indiana St, Los Angeles 33, Calif.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Orr & Sembower Inc, Reading, Pa.
Page Boiler Co, 815 Webster Ave, Chicago 14, Ill.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Steamaster Automatic Boiler Co, 5819 S Compton Ave, Los Angeles
Steel Products Engrg Co, Combustioneer Div, 1200 W Columbia St, Springfield, Ohio
Stout, David, & Sons, 7016 Manchester Blvd, St Louis 17, Mo.
Superior Combustion Industries, Inc, Times Bldg, New York 18, N. Y.
Timken Detroit Axle Co, Box 56, Roosevelt Park Sta, Detroit 32, Mich.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
U. S. Machine Corp, 320 NC St, Lebanon, Ind.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vanor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.
Will-Burt Co, Orrville, Ohio
York-Shipley Inc, York, Pa.

BOILERS, WASTE-HEAT

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crotty Mfg Corp, 133-15 35th Ave, Flushing, N. Y.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Doyle & Roth Mfg Co, Ft. of 23 St, Brooklyn, N. Y.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Delaware
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Keeler, E Co, 238 West St, Williamsport 3, Pa.
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Maxim Silencer Co, 85 Homestead Ave, Hartford 1, Conn.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Page Boiler Co, 815 Webster Ave, Chicago 14, Ill.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Struthers Wells Corp, Warren, Pa.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BOILERS, WATER-TUBE 30,000 LB AND UNDER

American Hydrotherm Corp, 33-70 12th St, Long Island City 6, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Besler Corp, 4053 Harlan St, Emeryville 8, Calif.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave, S E Minneapolis 14, Minn.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Delaware
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
International Boiler Wks Co, 1 Birch St, East Stroudsburg, Pa.
Keeler, E Co, 238 West St, Williamsport 3, Pa.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Mund Boilers Inc, 1600 N Indiana St, Los Angeles 33, Calif.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Page Boiler Co, 815 Webster Ave, Chicago 14, Ill.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Riley Stoker Corp, 9 Neponset St, Worcester, Mass.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Steamaster Automatic Boiler Co, 5819 South Compton Ave, Los Angeles 11, Calif.

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CROTTY SCOTCH MARINE STEEL HEATING BOILERS
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1,000 to 25,000 Sq. Ft. Steam Radiation
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Manufacturers and Patentees of
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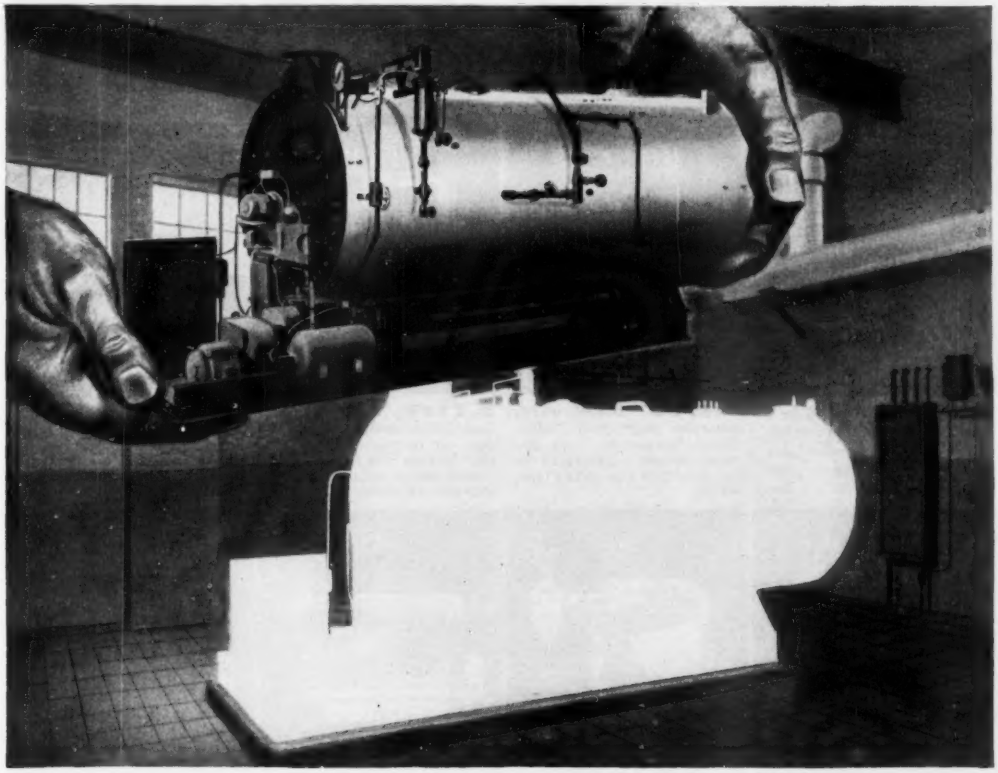

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When speed is vital, you can save weeks of valuable installation time with a Cleaver-Brooks boiler — delivered to location as a complete, factory assembled and tested, self-contained unit, with much of the trim and accessories provided.

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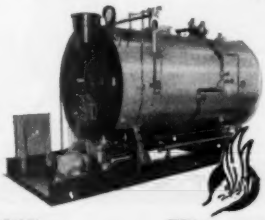

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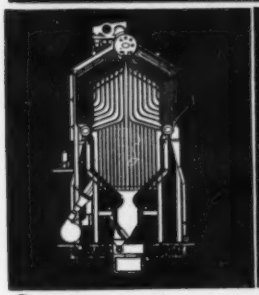
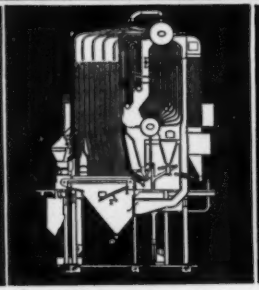
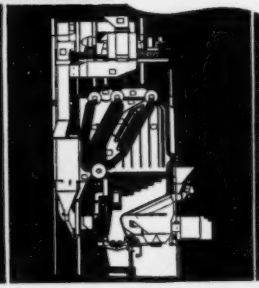


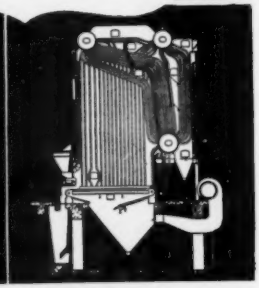
H-TYPE, a self-contained steel cased generator unit for any fuel or firing method, for any desired capacity or pressure.



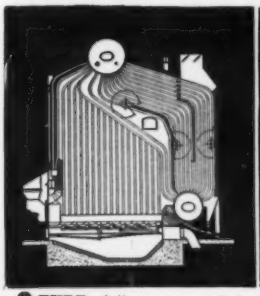
O-TYPE, 2-drum steam generator with fully water cooled furnace for high capacity output. Adaptable to tile, insulation and casing type setting.



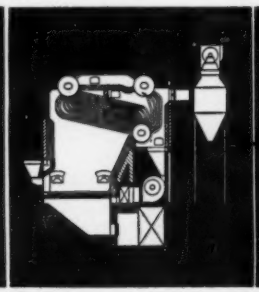
B-TYPE, 4-drum design. Gas, Oil or low fusion Western coal can be readily burned in this furnace which is water cooled and provided with cast iron armor protection.



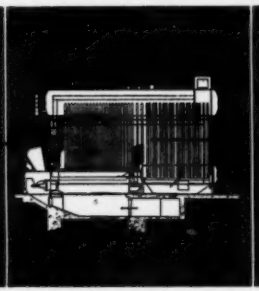
A-TYPE, 3-drum design with special front bank tube curvatures to increase the radiant surface, accelerating speed of circulating and rate of steaming.



O-TYPE, fully water cooled furnace with all water wall supply tubes inside the setting, which is tile, insulation and casing type.

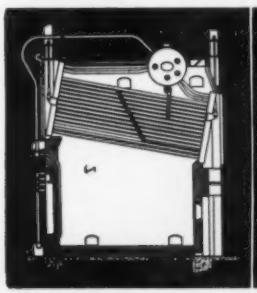


L-TYPE, for low headroom conditions, two top drums at the same level providing maximum steam disengaging surface. Many sizes can be shipped shop assembled.

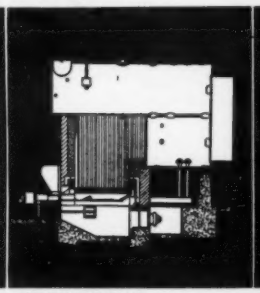


S-TYPE, provides water walled furnace that does not require circulator connections, the setting except for front and bridge walls is constructed of refractory tile water cooled, insulated steel panel cased.

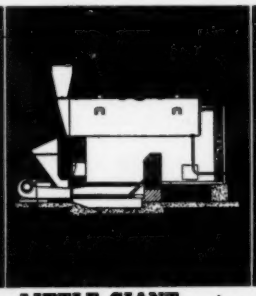
LD-TYPE, long drum with box header construction with either single or double horizontal drums. A thoroughly standardized unit built in units as large as 7,000 square ft. of heating surface.



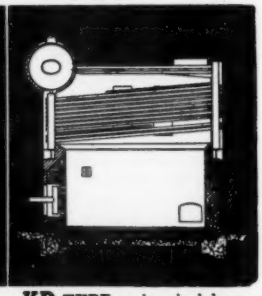
XD-TYPE, cross drum box header type, with steep inclination to the main tube bank to promote rapid circulation — Smaller sizes can be shipped fully assembled or tube bank assembled and drum detached.



UNIVERSAL, fire tube boilers sizes to 300 H.P. (1) for brick setting—(2) steel cased refractory lined in self-contained units—(3) either of these styles with water cooled furnaces.



LITTLE GIANT, a shop assembled unit combining pressure element and steel refractory lined furnace — one piece boiler shell — 9 sizes 10 to 75 H.P. for 100 or 150 lb. W.S.P.



KD-TYPE, a knocked-down cross drum type boiler adapted from the Union Cross Drum Power Boiler design. No field welding required. 14 sizes from 2996 thru 34, 119 sq. ft. E.D.R. S.H.B.I. steam rating.

Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BOILERS, WATER-TUBE, 30,000-100,000 LB

American Hydrotherm Corp, 33-70 12th St, Long Island City 6, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave S E, Minneapolis 14, Minn.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Delaware
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Hellman Boiler Wks, 132 Linden St, Allentown, Pa.
Keeler, E Co, 238 West St, Williamsport 3, Pa.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Riley Stoker Corp, 9 Neponset St, Worcester, Mass.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BOILERS, WATER-TUBE, OVER 100,000 LB

American Hydrotherm Corp, 33-70 12th St, Long Island City 6, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Delaware
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Riley Stoker Corp, 9 Neponset St, Worcester, Mass.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BOLTS, FLANGE, HIGH-TEMPERATURE

Bethlehem Steel Co, Bethlehem, Pa.
Lamson & Sessions Co, 1971 W 85th St, Cleveland 2, Ohio

BOXES, JUNCTION

Adam, Frank, Electric Co, P O Box 357, St Louis 3, Mo.
Appleton Electric Co, 1701-41 Wellington Ave, Chicago 13, Ill.
Crouse Hinds Co, Wolf & Seventh N, Syracuse 1, N. Y.
General Electric Co, Construction Materials Div, 1285 Boston Ave, Bridgeport 2, Conn.
Graybar Electric Co Inc, 420 Lexington Ave, N. Y. 17, N. Y.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh 19, Pa.
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.

BREAKERS, CIRCUIT, AIR

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Crouse Hinds Co, Wolf & Seventh N, Syracuse 1, N. Y.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Federal Electric Products Co, Inc, 50 Paris St, Newark 5, N. J.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
I-T-E Circuit Breaker Co, 19th & Hamilton Sts, Phila 30, Pa.
Line Material Co, 700 W Michigan St, Milwaukee 1, Wis.
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Trumbull Electric Dept, General Electric Co, 41 Woodford Ave, Plainville, Conn.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

BREAKERS, CIRCUIT, OIL

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Pacific Electric Mfg Co, 5815 Third St, San Francisco 24, Calif.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

BREAKERS, VACUUM

Schade Valve Mfg Co, 2527 N Bodine St, Philadelphia 33, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.

BREECHINGS

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Badger Fire Extinguisher Co, 624 Somerville Ave, Somerville, Mass.
Bethlehem Steel Co, Bethlehem, Pa.
Bigelow Co, Lloyd & River Sts, New Haven 3, Conn.
Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Chicago Bridge & Iron Co, 2454 McCormick Bldg, Chicago 4, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Fly Ash Arrestor Corp, P O Box 1883, Birmingham 1, Ala.
General American Transportation Corp, 10 E 49th St, N. Y. 17, N. Y.
Graver Tank & Mfg Co Inc, 4809 Tod Ave, East Chicago, Ind.
Holmes, Robert, & Bros, Danville, Ill.
Kirk & Blum Mfg Co, 2874 Spring Grove Ave, Cincinnati 25, Ohio
Koven, L O & Brother Inc, 154 Ogden Ave, Jersey City 7, N. J.
Littleford Bros Inc, 453 E Pearl St, Cincinnati, Ohio
Nazareth Steel Fabricators Inc, Nazareth, Pa.
Nooter Corp, 1400 S 2nd St, St Louis 4, Mo.
Quaker City Iron Wks, Aramingo Ave & Ontario St, Phila 34, Pa.
Steel Products Corp, 52 Vanderbilt Ave, New York 17, N. Y.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

BRICK, FIRE

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Botfield Refractories Co, Swanson & Clymer Sts, Phila 47, Pa.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Denver Fire Clay, P O Box 5510, Denver 17, Colo.
Gladding, McBean & Co, 2901 Los Feliz Blvd, Los Angeles, Calif.
Green, A P, Fire Brick Co, Mexico, Mo.
Harbison-Walker Refractories Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
Laclede Christy Co, 812 Olive St, St Louis, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Power Plant Efficiency Co, P O Box 592, Indianapolis 4, Ind.
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
Reintjes, Geo P, Co, 2517 Jefferson St, P O Box 856, Kansas City, Mo.
Waite Gravity Lock Refractories, 111 Westminster St, Providence 3, R. I.

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Laclede-Christy Co, 812 Olive St, St Louis, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Quigley Co, Inc, 527 Fifth Ave, New York 17, N. Y.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Refractory & Insulation Co, 120 Wall St, New York 5, N. Y.

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Ramtite Co, 2549 W 18th St, Chicago 8, Ill.

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Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Denver Fire Clay Co, P O Box 5510, Denver 17, Colo.
Green, A P, Fire Brick Co, Mexico, Mo.
Harbison-Walker Refractories Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
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Hewitt-Robins Inc, 370 Lexington Ave, New York 17, N. Y.
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Gifford-Wood Co, Hudson, N. Y.
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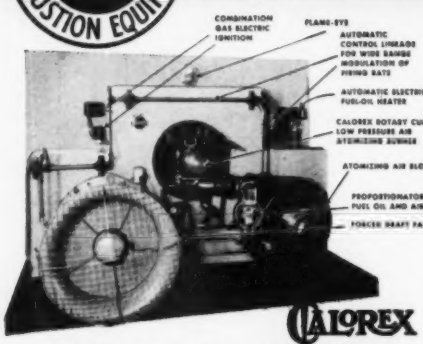

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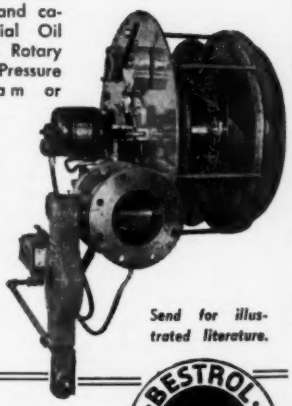

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Laclede Christy Co, 812 Olive St, St. Louis, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
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Refractory & Insulation Corp, 120 Wall St, New York 5, N. Y.
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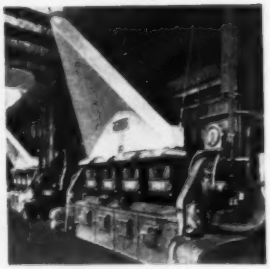

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Houghton, E F & Co, 303 W Lehigh Ave, Phila 33, Pa.
Kelite Prod Inc, Box 2917 Terminal Annex, Los Angeles 54, Calif.
Magic Chemical Co, 121 Crescent St, Brockton, Mass.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Oakite Products, Inc, 23Z Rector St, New York 6, N. Y.
Pabco Products, Inc, 475 Brannan St, San Francisco 19, Calif.
Pennsylvania Refining Co, 2686 Lisbon Rd, Cleveland 4, Ohio
Pennsylvania Salt Mfg Co, 1000 Widener Bldg, Phila, Pa.
Petroleum Solvents Corp, 331 Madison Ave, New York, N. Y.
Sanson, H E, & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Sexauer, J A Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Sonneborn, L, Sons, Inc, 300 Fourth Ave, New York 10, N. Y.
Speco Co, 7308 Associate Ave, Cleveland 9, Ohio
Stonhard Co, 1306 Spring Garden St, Phila 23, Pa.
Suhm Co, 4701 W Electric Ave, Milwaukee 14, Wis.
Sumco Products, Inc, 144 Centre St, Brooklyn 31, N. Y.
Wilkening Mfg Co, 2009 S 71st St, Philadelphia 42, Pa.

COMPOUNDS, COAL-DUST CONTROL

Aquadyne Corp, 441 Lexington Ave, New York, N. Y.
Johnson-March Corp, 1724 Chestnut St, Philadelphia 3, Pa.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.

COMPOUNDS, CONCRETE, RESURFACING

Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dura-Tred Co, 353 N Central Park Blvd, Chicago 24, Ill.
Flexrock Co, 3677 Filbert St, Phila 4, Pa.
Horn, A C Co Inc, Tenth St & 44th Ave, Long Island City 1, N. Y.
Monroe Co, 10703 Quebec Ave, Cleveland 6, Ohio
Pabco Products, Inc, 475 Brannan St, San Francisco 19, Calif.
Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio
Smooth-On Mfg Co, 572 Communipaw Ave, Jersey City 4, N. J.
Sonneborn, L, Sons, Inc, 300 Fourth Ave, New York 10, N. Y.
Stonhard Co, 1306 Spring Garden St, Phila 23, Pa.
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio

COMPOUNDS, GREASE-REMOVING

Aquadyne Corp, 441 Lexington Ave, New York, N. Y.
Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dacar Chemical Prods Inc, 1007 McCartney St, Pittsburgh 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.

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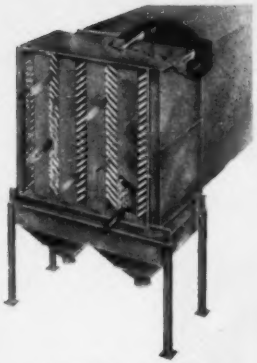
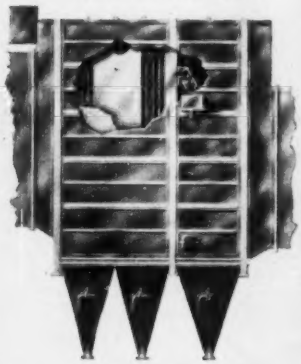
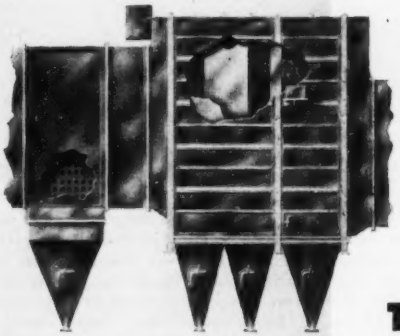


MECHANICAL COLLECTOR



ELECTRICAL PRECIPITATOR



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Houghton, E F Co, 303 W Lehigh Ave, Philadelphia 33, Pa.
Kelite Prod Inc, Box 2917, Terminal Annex, Los Angeles 54, Calif.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Pennsylvania Salt Mfg Co, 1000 Widener Bldg, Phila, Pa.
Petroleum Solvents Corp, 331 Madison Ave, New York, N. Y.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons, Inc, 300 Fourth Ave, New York 10, N. Y.
Sumco Products, Inc, 144 Centre St, Brooklyn 31, N. Y.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

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Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
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Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

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Crane Packing Co, 1830 Cuyler Ave, Chicago 13, Ill.
Dixon, Joseph Crucible Co, 167 Wayne St, Jersey City 3, N. J.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Flexrock Co, 3677 Filbert St, Phila 4, Pa.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Gredag Inc, Niagara Falls, N. Y.
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Hollow Center Packing Co, 6523 Euclid Ave, Cleveland 3, Ohio
Horn, A C Co Inc, Tenth St & 44th Ave, Long Island City 1, N. Y.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Key Co, Box 494, East St Louis, Ill.
Keystone Lubricating Co, 21st & Clearfield Sts, Phila 32, Pa.
Lake Chemical Co, 3052 W Carroll Ave, Chicago 12, Ill.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
Marlo Co, Inc, 434 Broadway, New York 13, N. Y.
Parker Appliance Co, 17325 Euclid Ave, Cleveland 12, Ohio
Permatex Co, Inc, 1702-1720 Ave Y, Brooklyn 35, N. Y.
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Sexauer, J A Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Smooth-On Mfg Co, 572 Communipaw Ave, Jersey City 4, N. J.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio
X-Pando Corp, 43 36th St, Long Island City 1, N. Y.

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Alladdin Laboratories Inc, 68 William St, New York 5, N. Y.
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Amercian-Marietta Co, 43 E Ohio St, Chicago 11, Ill.
American Sand-Banum Co, Inc, 9 Rockefeller Plaza, N. Y. 20, N. Y.
Aquatrol, Inc, P O Box 12233, Houston, Texas
Betz, W H & L D, Gillingham & Worth Sts, Philadelphia 24, Pa.
Bird-Archer Co, 4337 N American St, Phila 40, Pa.
Burndy Engrg Co, Norwalk, Conn.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Clayton Mfg Co, P O Box 550, El Monte, Calif.
Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dominion Chemical Co Inc, 11 W 42nd St, Dept A, N. Y. 18, N. Y.
Eagle-Picher Co, American Bldg, Cincinnati 1, Ohio
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Feedwaters, Inc, 140 Cedar St, New York 6, N. Y.
Fiske Bros Refining Co, Lubriplate Div, 129 Lockwood St, Newark 5, N. J.
Flintkote Co, 30 Rockefeller Plaza, New York 20, N. Y.
Freedom-Valvoline Oil Co, Freedom, Pa.
Goodall Rubber Co, Whitehead Rd, Trenton 4, N. J.
Gulf Oil Corp, 3800 Gulf Bldg, Pittsburgh 30, Pa.
Haering, D W & Co, P O Box 6037, Harlandale Sta, San Antonio, Texas
Horn, A C Co, Inc, Tenth St & 44th Ave, Long Island City 1, N. Y.
Houghton, E F & Co, 303 W Lehigh Ave, Phila 33, Pa.
Inertol Co Inc, 480 Frelinghuysen Ave, Newark 5, N. J.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Keystone Lubricating Co, 21st & Clearfield Sts, Phila 32, Pa.
Madden, P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Monsanto Chemical Co, 1200 S Second St, St Louis 4, Mo.
Mortell J W Co, Kankakee, Ill.
Oakite Products, Inc, 23Z Rector St, New York 6, N. Y.
Pabco Products, Inc, 475 Brannan St, San Francisco 19, Calif.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Perolin Co Inc, 10 E 40th St, New York 16, N. Y.
Polyphase Chemical Services, Inc, 150 Nassau St, N. Y. 38, N. Y.
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.
Rust-Oleum Co, 2425 Oakton St, Evanston, Ill.
Sanson, H E, & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Sexauer, J A, Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Shell Oil Co Inc, 50 W 50th St, New York 20, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Speco Co, 7308 Associate Ave, Cleveland 9, Ohio
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Whiting Leather & Belting Co, 9 Murray St, New York 7, N. Y.
Wright Chemical Corp, 617 W Lake St, Chicago 6, Ill.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

COMPOUNDS, SCALE, RUST-REMOVING

Aiken-Murray Corp, 131 E 23rd St, New York 10, N. Y.
American K A T Corp, Garwood, N. J.
American Sand-Banum Co, Inc, 9 Rockefeller Plaza, N. Y. 20, N. Y.
Aquatrol, Inc, P O Box 12233, Houston, Texas
Bird-Archer Co, 4337 N American St, Phila 40, Pa.
Brooks Chemicals Inc, 3304 E 87 St, Cleveland, Ohio
Buromin Co, Hagan Bldg, Pittsburgh 30, Pa.
Clayton Mfg Co, P O Box 550, El Monte, Calif.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dacar Chemical Prods Inc, 1007 McCartney St, Pittsburgh 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dominion Chemical Co Inc, 11 W 42nd St, Dept A, N. Y. 18, N. Y.
Dowell Inc, P O Box 536, Tulsa, Okla.
Drew, E F, & Co Inc, 15 E 26th St, New York 10, N. Y.
du Pont de Nemours, E I & Co, Inc, Wilmington 98, Del.
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Feedwaters, Inc, 140 Cedar St, New York 6, N. Y.
Freedom-Valvoline Oil Co, Freedom, Pa.
Haering, D W & Co, P O Box 6037, Harlandale Sta, San Antonio, Texas
Houghton, E F & Co, 303 W Lehigh Ave, Phila 33, Pa.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Kelite Prod Inc, Box 2917, Terminal Annex, Los Angeles 54, Calif.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Monsanto Chemical Co, 1700 S Second St, St Louis 4, Mo.
Oakite Products Inc, 23Z Rector St, New York 6, N. Y.
Pennsylvania Salt Mfg Co, 1000 Widener Bldg, Philadelphia, Pa.
Permatex Co, Inc, 1702-1720 Ave Y, Brooklyn 35, N. Y.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Perolin Co Inc, 10 E 40th St, New York 16, N. Y.
Polyphase Chemical Services Inc, 150 Nassau St, New York 38, N. Y.
Portland Shingle Co, Chemical Div, 9038 N Denver Ave, Portland 17, Ore.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Sexauer, J A Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Suhm Co, 4701 W Electric Ave, Milwaukee 14, Wis.
Sumco Products Inc, 144 Centre St, Brooklyn 31, N. Y.
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Wright Chemical Corp, 617 W Lake St, Chicago 6, Ill.

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Aiken-Murray Corp, 131 E 23rd St, New York 10, N. Y.
Alladdin Labs Inc, 68 William St, New York 5, N. Y.
Allen, Robert G Co, Mechanicville, N. Y.
American K A T Corp, Garwood, N. J.
American Sand Banum Co, 9 Rockefeller Plaza, New York 20, N. Y.
Bird-Archer Co, 4337 N American St, Phila 40, Pa.
Brooks Chemicals Inc, 3304 E 87 St, Cleveland, Ohio
Dacar Chemical Prods Inc, 1007 McCartney St, Pitts. 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Disinfectol Co, 635 Lisbon Ave, Buffalo 15, N. Y.
Dominion Chemical Co Inc, 11 W 42nd St, Dept A, N. Y. 18, N. Y.
Drew, E F & Co Inc, 15 E 26th St, New York 10, N. Y.
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Feedwaters, Inc, 140 Cedar St, New York 6, N. Y.
Houghton, E F Co, 303 W Lehigh Ave, Philadelphia 33, Pa.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Madden, P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Maxfal Chemical Co, 33 W 42nd St, New York 18, N. Y.
National Aluminate Co, 6246 W 66th Place, Chicago 38, Ill.
Nutmeg Chemical Co, 134 Haven St, New Haven 10, Conn.
Oakite Products, Inc, 23Z Rector St, New York 6, N. Y.
Perolin Co Inc, 10 E 40th St, New York 16, N. Y.
Petroleum Solvents Corp, 331 Madison Ave, New York, N. Y.
Polyphase Chemical Services, Inc, 150 Nassau St, N. Y. 38, N. Y.
Portland Shingle Co, Chemical Div, 9038 N Denver Ave, Portland 17, Ore.
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Sanson, H E, & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Sexauer, J A Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Standard Chemicals Inc, 36 Summer St, Natick, Mass.
Sumco Products Inc, 144 Centre St, Brooklyn 31, N. Y.
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Wilkening Mfg Co, 2009 S 71st St, Philadelphia 42, Pa.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

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Alladdin Labs Inc, 68 William St, New York 5, N. Y.
Armstrong Cork Co, Liberty St, Lancaster, Pa.
Bakelite Co, 30 E 42nd St, New York 17, N. Y.
Barrett Div, Allied Chemical & Dye Corp, 40 Rector St, N. Y. 6, N. Y.
Cabot, Samuel, Inc, 141 Milk St, Boston 9, Mass.
Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dominion Chemical Co, Inc, 11 W 42nd St, Dept A, N. Y. 18, N. Y.
Dow Corning Corp, Midland, Mich.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Flexrock Co, 3677 Filbert St, Phila 4, Pa.
Flintkote Co, 30 Rockefeller Plaza, New York 20, N. Y.
Horn, A C Co Inc, Tenth St & 44th Ave, Long Island City 1, N. Y.
Inertol Co Inc, 480 Frelinghuysen Ave, Newark 5, N. J.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
Monroe Co, Inc, 10703 Quebec Ave, Cleveland 6, Ohio
Paramount Industrial Products Co, University Center St, Cleveland 6, Ohio
Perolin Co Inc, 10 E 40th St, New York 16, N. Y.
Rubber & Plastics Compound Co, Inc, 30 Rockefeller Plaza, New York 20, N. Y.
Rust-Oleum Corp, 2425 Oakton St, Evanston, Ill.
Saverite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Speco Co, 7303 Associate Ave, Cleveland 9, Ohio
Standard Oil Co of Calif, 225 Bush St, San Francisco 20, Calif.
Stonhard Co, 1306 Spring Garden St, Phila 23, Pa.
Sudbury Laboratory, South Sudbury, Mass.
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio
X-Pando Corp, 43-15 36th St, Long Island City 1, N. Y.

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Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
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Brunner Mfg Co, 1821 Broad St, Utica, N. Y.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Clark Bros Co, Inc, Olean, N. Y.
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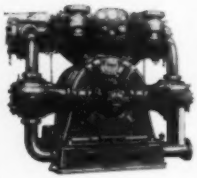
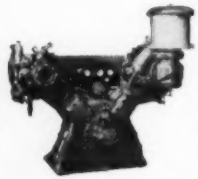


WN-114—Heavy-duty, continuous service, two stage, double acting, four cylinder, water-cooled type. 1186 to 1948 CFM. Maximum pressure of 500 psi. Also twin units—2372 to 3896 CFM. Single-stage, single units to 3896 CFM.—Twins to 8800 CFM.



WN-112—Heavy-duty, continuous service, two cylinder, two-stage, double acting, water-cooled type. 368 to 974 CFM. Maximum pressure of 500 psi. Also twin units—960 to 1948 CFM. Single-stage, single units to 1948 CFM—twins to 3896 CFM.

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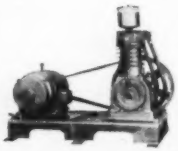

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Clark Bros Co, Inc, Olean, N. Y.
Davey Compressor Co, Kent, Ohio
DeLaval Steam Turbine Co, Trenton 2, N. J.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Elliott Co, Jeannette, Pa.
Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.
Roots-Connersville Blower Corp, 900 West Mount Street, Connersville, Ind.
Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
Trane Co, LaCrosse, Wis.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Westinghouse Elec Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

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Beaird, J B Co Inc, 6200 St Vincent Ave, Shreveport, La.
Brunner Mfg Co, 1821 Broad St, Utica, N. Y.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Chicago Pneumatic Tool Co, 6 E 44th St, New York 17, N. Y.
Clark Bros Co, Inc, Olean, N. Y.
Cooper-Bessemer Corp, Mount Vernon, Ohio
Curtis Mfg Co, 1905 Kienlen Ave, St Louis 20, Mo.
DeVilbiss Co, 300 Phillips Ave, Toledo 1, Ohio
Frick Co, W Main St, Waynesboro, Pa.
Gardner-Denver Co, Quincy, Ill.
Gray Co Inc, 60 11th Ave S E, Minneapolis 13, Minn.
Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Nordberg Mfg Co, 3073 S Chase Ave, Milwaukee 7, Wis.
Pennsylvania Pump & Compressor Co, P O Box 222, Easton, Pa.
Quincy Compressor Co, Quincy, Ill.
Schramm Inc, West Chester, Pa.
Thomas, H Emerson, & Associates, P O Box 270, Westfield, N. J.
Trane Co, LaCrosse, Wis.
Union Steam Pump Co, Battle Creek, Mich.
Wayne Pump Co, Tecumseh St, Fort Wayne 4, Ind.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

COMPRESSORS, AIR, GAS, ROTARY

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
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Nash Engrg Co, 346 Wilson Rd, S Norwalk, Conn.
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Yeomans Brothers Co, 1443 N Dayton St, Chicago 22, Ill.

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Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Mund Boilers Inc, 1600 N Indiana St, Los Angeles 33, Calif.
Roth, Roy E Co, 2422 4th Ave, Rock Island, Ill.
Steamaster Automatic Boiler Co, 5819 South Compton Ave, Los Angeles 11, Calif.
Sterling Engrg & Mfg Corp, 110 Business St, Hyde Park 36, Boston, Mass.
Stout, David, & Sons, 7016 Manchester Blvd, St. Louis 17, Mo.
Templeton Bros, 169 Reservation Rd, Hyde Park 36, Mass.
Velocity Steam Production Engrg Inc, 38 S Dearborn, Chicago, Ill.
Whittington Pump & Engrg Corp, 1126 Prospect St, Indianapolis 3, Ind.
Yeomans Brothers Co, 1443 N Dayton St, Chicago 22, Ill.

CONDENSERS, BAROMETRIC, JET

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Chicago Pneumatic Tool Co, 6 E 44th St, New York 17, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Croll-Reynolds Co, Inc, 17 John St, New York 7, N. Y.
Elliott Co, Jeanette, Pa.
Foster-Wheeler Corp, 165 Broadway, New York 6, N. Y.
Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.
Lummus Co, 2 Park Ave, New York 17, N. Y.
Nooter Corp, 1400 S Second St, St. Louis 4, Mo.
Ross Heater & Mfg Co, Inc, 1407 West Ave, Buffalo 13, N. Y.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Struthers Wells Corp, Warren, Pa.
Wheeler, C H, Mfg Co, Lehigh & Sedgley Aves, Philadelphia 32, Pa.
Worthington Corp, Harrison, N. J.

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Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
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Elliot Co, Jeannette, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Lapp Insulator Co Inc, 150 Maple St, Le Roy, N. Y.
Mallory, P R & Co, Inc, 3029 E Washington St, Indianapolis 6, Ind.
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Sprague Electric Co, 189 Beaver St, North Adams, Mass.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Westinghouse Electric Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.

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American Locomotive Co, Schenectady 5, N. Y.
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Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
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Curtis Mfg Co, 1905 Kienlen Ave, St. Louis 20, Mo.
Downingtown Iron Wks Inc, Wallace Ave, Downingtown, Pa.
Griscom-Russell Co, 285 Madison Ave, New York 17, N. Y.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Kellogg M W, Co, 225 Broadway, New York 7, N. Y.
Marlo Coil Co, 6135 Manchester, St Louis 10, Mo.
McQuay Inc, 1600 Broadway St, N E, Minneapolis 13, Minn.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Nooter Corp, 1400 S 2nd St, St. Louis 4, Mo.
Patterson-Kelley Co, 129 Burson St, East Stroudsburg, Pa.
Ready Power Co, 11231 Freud Ave, Detroit, Mich.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.

Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Trane Co, LaCrosse, Wis.
U S Air Conditioning Corp, Como Ave S E at 33rd, Minneapolis 14, Minn.
Worthington Corp, Harrison, N. J.
Young Radiator Co, 709 S Marquette St, Racine, Wis.

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Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Curtis Mfg Co, 1905 Kienlen Ave, St. Louis 20, Mo.
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Frick Co, W Main St, Waynesboro, Pa.
General Electric Co, Air Conditioning Dept, 5 Lawrence St, Bloomfield, N. J.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Heat-X-Changer Co, Brewster, N. Y.
McQuay, Inc, 1600 N East Broadway, Minneapolis, Minn.
Moyer, R E, Inc, 10 & Union Sts, Catasauqua, Pa.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Patterson-Kelley Co, Inc, 129 Burson St, East Stroudsburg, Pa.
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Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
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Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

CONDENSERS, SURFACE

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
American Locomotive Co, Schenectady 5, N. Y.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Chloramine Co, 117 W 13th St, New York 11, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Croll-Reynolds Engrg Co Inc, 17 John St, New York 7, N. Y.
Downingtown Iron Wks Inc, Wallace Ave, Downingtown, Pa.
Elliott Co, Jeannette, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Hellman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Ingersoll-Rand Co, 11 Broadway, New York 17, N. Y.
Lummus Co, 2 Park Ave, New York 17, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Nooter Corp, 1400 S Second St, St. Louis 4, Mo.
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Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
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Worthington Corp, Harrison, N. J.

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American Brass Co, American Metal Hose Br, Waterbury 20, Conn.
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Johns-Manville, 22 East 40th St, New York 16, N. Y.
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National Supply Co, Grant Bldg, Pittsburgh 30, Pa.
Rome Cable Corp, Ridge St, Rome, N. Y.
Steel & Tubes Div, Republic Steel Corp, 218 E 131st St, Cleveland 8, Ohio
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Youngstown Sheet & Tube Co, Youngstown 1, Ohio

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Ric-Wil Co, 1052 Union Commerce Bldg, Cleveland, Ohio

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Burndy Engrg Co, Norwalk, Conn.
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Superior Electric Co, 83 Laurel St, Bristol 2, Conn.

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Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
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Blackhawk Mfg Co, 5325 W Rogers St, Milwaukee 1, Wis.
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Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
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General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
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Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
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Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
Paul Valve Co, 683 Third Ave, New York 17, N. Y.
Penn Controls, Inc, Goshen, Ind.
R-S Products Corp, 4600 Germantown Ave, Phila 44, Pa.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Taco Heaters, Inc, 137 South St, Providence, R. I.
Taylor Instrument Cos, 95 Ames St, Rochester 11, N. Y.
Vickers Inc, 1596 Oakman Blvd, Detroit, Mich.

CONTROLS, SAFETY, OIL AND GAS ENGINE

Fisher Governor Co, Marshalltown, Iowa
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
J-O Bell Products, 4840 South St. Louis, Chicago, Ill.
Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Controls, Inc, Goshen, Ind.
Synchro-Start Products, Inc, 8151 Ridgway, Skokie, Ill.

CONTROL SYSTEMS, AIR CONDITIONING

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bahnson Co, 1001 S Marshall St, Winston-Salem, N. C.

A COMPLETELY INSULATED SPLICE IN 3 SIMPLE STEPS

A PERFECT WIRE TERMINATION IN 1 EASY OPERATION

ONLY 2 Splice Caps for #18 to 3/0 wires

ALL installed with 1 pres-SURE-tool

BUCHANAN Electrical Products Corporation

COMBUSTION CONTROL SYSTEMS

BAILEY METERS

BAILEY AIR-OPERATED COMBUSTION CONTROL

Bailey Air-Operated Combustion Control installed on your boiler can give you great savings. Some users have reported fuel and maintenance savings in excess of the control system cost—within a few months after its installation. Others credit it with savings resulting from more uniform steam pressure, fewer outages, and increased operating safety.

TAILORED TO YOUR PLANT

Every Bailey Combustion Control System is engineered to the specific conditions under which it must operate. Like your power plant, it fits the job. Combustion, feed water, steam temperature, heater levels, pump speed and other factors may be co-ordinated to deliver maximum power at minimum cost.

Bailey Engineers with a wealth of fuel burning experience are available to assist in the design and application of the control system required by your installation.

Write for Bulletin No. 102-E

BAILEY METER COMPANY
1016 IVANHOE ROAD CLEVELAND 10, OHIO

advertised in this issue see advertisers' index pages 192-193

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Bristol Co, Waterbury 20, Conn.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Frick Co, W Main St, Waynesboro, Pa.
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Photoswitch, Inc, 77 Broadway, Cambridge 42, Mass.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

CONTROL SYSTEMS, COMBUSTION

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Askania Regulator Co, 240 E Ontario St, Chicago 11, Ill.
Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Barber-Colman Co, Rockford, Ill.
Bristol Co, Waterbury 20, Conn.
Brooke Engrg Co Inc, 4517 Wayne Ave, Philadelphia 20, Pa.
Canton Stoker Corp, 741 Andrews Pl S W, Canton 1, Ohio
Cash, A W Co, Box 551, Decatur 7, Ill.
Cleveland Fuel Equip Co, 7316 Associate Ave, Cleveland 9, Ohio
Coen Co, 40 Boardman Place, San Francisco 3, Calif.
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Combustion Control Corp, 77 Broadway, Cambridge 42, Mass.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Eclipse Fuel Eng Co, 1029 Buchanan St, Rockford, Ill.
Ess Instrument Co, 96 Washington Ave, Bergenfield, N. J.
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General Power Plant Corp, 381 Fourth Ave, New York 16, N. Y.
General Regulator Corp, 165 Broadway, New York 6, N. Y.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Hays Corp, Michigan City 23, Ind.
Illinois Engrg Co, Racine Ave & 20th Pl, Chicago 8, Ill.
Inferno Co, 115 Ricou St, Shreveport, La.
Leahy Mfg Co, 1804 E 8th St, Los Angeles 21, Calif.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
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Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
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Read Standard Corp, Erie, Pa.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
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Bell & Gossett Co, 8200 N Austin Ave, Morton Grove, Ill.
Bristol Co, Waterbury 20, Conn.
Canton Stoker Corp, 741 Andrews Pl S W, Canton 1, Ohio
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
General Power Plant Corp, 381 4th Ave, New York 16, N. Y.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Illinois Engrg Co, Racine Ave & 20th Pl, Chicago 8, Ill.
Iron Fireman Mfg Co, 3170 W 106 St, Cleveland 11, Ohio
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Leahy Mfg Co, 1804 E 8th St, Los Angeles 21, Calif.
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Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Ave, Philadelphia 34, Pa.
Penn Control, Inc, Goshen, Ind.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
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Spence Engrg Co, Inc, Walden, N. Y.
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Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
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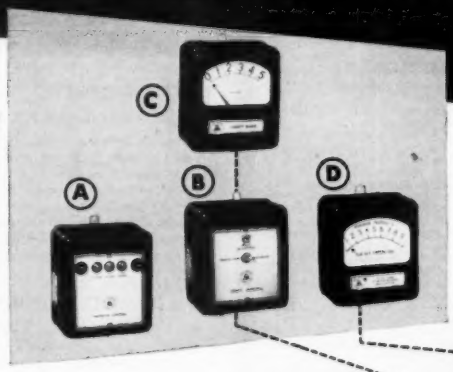
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.

CONTROL SYSTEMS, HEATING, STEAM

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Barber-Colman Co, Rockford, Ill.
Bristol Co, Waterbury 20, Mass.
Canton Stoker Corp, 741 Andrews Pl S W, Canton 1, Ohio
Control Products Inc, 306 Sussex Ave, Harrison, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
General Power Plant Corp, 381 Fourth Ave, New York 16, N. Y.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Illinois Engrg Co, Racine Ave & 20th Pl, Chicago 8, Ill.
Inferno Co, 115 Ricou St, Shreveport, La.
Iron Fireman Mfg Co, 3170 W 106 St, Cleveland 11, Ohio
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Leahy Mfg Co, 1804 E 8th St, Los Angeles 21, Calif.
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.

PERFEX DRAFT CONTROL SYSTEMS pay for themselves fast

Save Fuel
Save Labor
Save Money



(A) PROGRAM CONTROL
Opens damper before burner starts, and guides draft control for all firing rates and during "OFF" periods. Built-in fused line-switch; burner "on-off" switch; Damper "Automatic-Closed" switch.

(B) DRAFT CONTROL
Measures draft condition in fire box. Causes Actuator to reposition uptake damper. Includes built-in damper "Open Automatic" manual switch.

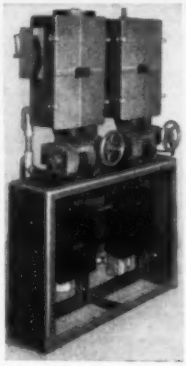
(C) DRAFT GAGE
Provides continuous visual check of draft conditions. Simplifies adjustment of Draft Control.

(D) FLUE GAS TEMPERATURE INDICATOR
Reflects extent to which boiler has absorbed heat. Warns of wasteful conditions, such as failing baffler, fouled tubes, excessive draft, improper fuel and air ratio adjustments.

ACTUATOR
The Actuator positions the uptake damper in response to the commands of the control system to maintain the correct overfire draft condition.

PERFEX
INDUSTRIAL INSTRUMENTS

Perfex Corporation, Milwaukee, Wis. • In Canada, Perfex Controls Ltd. Guelph, Toronto



all Electric CONTROLS

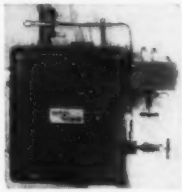
GENERAL GR REGULATOR

COMBUSTION CONTROL

GR all-electric combustion control systems comprise individually powered regulators and actuators coordinated for group parallel response by an all-electric master control system. These control systems employ the highest standards of reliability, response and stability.

Panel space required for the master instruments, remote manual control and position indicators is very small, resulting in space saving, compact instrument panel layouts.

The motorized actuators, shown at the right, are used for remote manual control of isolation or shut-off dampers, tempering air dampers, relatching mill dampers (after emergency trip), and many other types of remote manual control where the utmost in dependability is required.



HYDRAULIC CONTROL EQUIPMENT

GR hydraulic regulators for pressure, temperature and flow are manufactured, for use where extremely rapid response, combined with a high order of stability, is required. Applications of this type of equipment are being made in modern supersonic wind tunnels and other similar testing facilities.

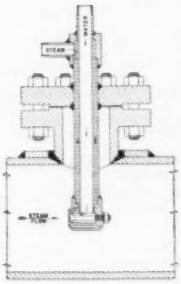
These hydraulic controls are also used for turbine regulation, high pressure valve operation and various types of sequence or program operating mechanisms. Standard single or duplicate pumping units are available in many different sizes of motors, pumps and tanks.

DESUPERHEATERS

GR desuperheaters employ four basic types used according to the limitations of service required:

1. Venturi nozzle type for combined pressure reducing and desuperheating involving very wide ranges of operation.
2. The mechanical atomizing type for low pressure drop and high available water supply pressure.
3. The steam atomizing type for low pressure drop, wide range and low water pressure supply.
4. The variable area mechanical atomizing type for installations normally furnished with steam atomizers but where atomizing steam is not available.

GR all-electric self-contained pressure and temperature regulators serve these various types of desuperheaters.

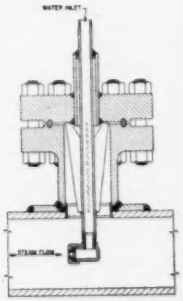


CONTROL DAMPERS

GR control dampers are specially designed for forced and induced draft fans, recirculation ducts, and many special processes where good regulating characteristics (inherent to the damper design) are required.

Design features: Removable end frame and damper blades, ball bearings, gas sealed bearings, stuffing boxes and outboard bearings where required.

The design illustrated is the equal percentage type wherein the linkage design produces an equal percentage of change in the area of opening for each increment of regulator or actuator motion. This design particularly desirable for close control near the closed damper position when operating at high pressure differentials.



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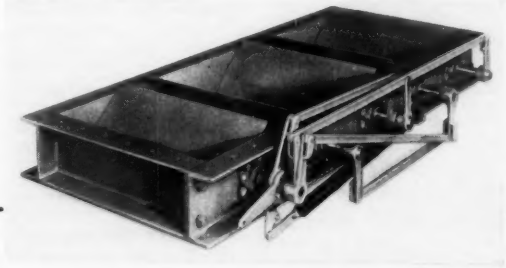

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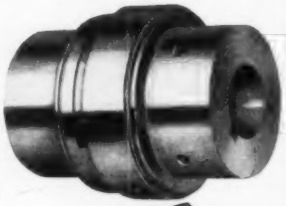

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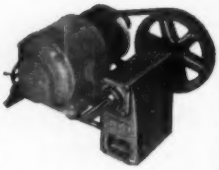

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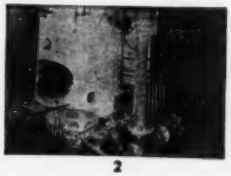
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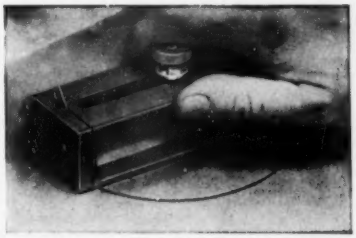

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Nordberg Mfg Co, 3073 S Chase Ave, Milwaukee 7, Wis.
Onan & Sons, Inc, D W, University Ave S E at 25th, Minneapolis 14, Minn.
Schramm Inc, West Chester, Pa.
Sterling Engine Co, 1270 Niagara St, Buffalo 13, N. Y.
Waukesha Motor Co, Waukesha, Wis.
Witte Engine Wks Div, 1600 Oakland Ave, Kansas City 3, Mo.
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Caterpillar Tractor Co, 600 W Washington St, Peoria 8, Ill.
Chicago Pneumatic Tool Co, 6 E 44th St, New York 17, N. Y.
Cooper-Bessemer Corp, Mount Vernon, Ohio
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
Fulton Iron Works Co, 1259 Delaware Ave, St. Louis 14, Mo.
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
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Niles Tool Wks Co, Div of Lima-Hamilton Corp, Hamilton, Ohio
Nordberg Mfg Co, 3073 S Chase Ave, Milwaukee 7, Wis.
Sheppard, R H, Co Inc, 101 Philadelphia St, Hanover, Pa.
Waukesha Motor Co, Waukesha, Wis.
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Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Atlas-Imperial Diesel Engine Co, 1000 19th Ave, Oakland 6, Calif.
Buda Co, 154th & Commercial, Harvey, Ill.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
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Onan, D W & Sons, Inc, University Ave, S E at 25th Minneapolis 14, Minn.
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Witte Engine Wks Div, 1600 Oakland Ave, Kansas City 3, Mo.

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Ames Iron Wks, Oswego, N. Y.
Clark Bros Co, Inc, Olean, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Filer & Stowell Co, 147 E Becher St, Milwaukee 7, Wis.
General Machinery Corp, Hamilton, Ohio
Holmes, Robert, & Bros, Danville, Ill.
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Koppers Co, Inc, 200 Scott St, Baltimore, Md.
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Maxim Silencer Co, 85 Homestead Ave, Hartford 1, Conn.
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Henderer's Sons, A L, Co, 625 Maryland Ave, Wilmington, Del.
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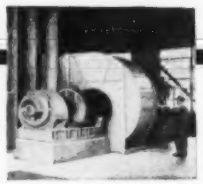
For Long, Dependable Service



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"Buffalo" Forced Draft Fans offer high efficiency over a wide range of capacities delivering as rated, even when fuel bed is unusually heavy. Non-overloading. Rugged construction throughout for continuous operation with minimum attention. WRITE FOR BULLETIN 3750.

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Modified radial double curved blades give high efficiency and extra heavy construction gives these fans extra long life on the job. Housings are designed for quick inspection of all parts. Non-overloading power characteristic and rising pressure characteristic assure stable performance under varying boiler conditions. WRITE FOR BULLETIN 3750.

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Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
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Look for the noun in the product listing, for example:
Boilers, Waste-Heat
not
Waste-Heat Boilers

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Burt Mfg Co, 47 E South St, Akron 11, Ohio
Coppus Engrg Corp, 344 Park Ave, Worcester 2, Mass.
Dracco Corp, 4063 E 116th St, Cleveland 5, Ohio
Fly Ash Arrestor Corp, P O Box 1883, Birmingham 1, Ala.
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General Blower Co, 8610 Ferriss Ave, Morton Grove, Ill.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Green Fuel Economizer Co, Inc, 627 Main St, Beacon, N. Y.
Hastings Air Conditioning Co, Inc, 108 S Colorado Ave, Hastings, Neb.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Ilg Electric Ventilating Co, 2850 N Crawford Ave, Chicago 41, Ill.
Kirk & Blum Mfg Co, 2874 Spring Grove Ave, Cincinnati 25, Ohio
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Newcomb-Detroit Co, 5741 Russell St, Detroit 11, Mich.
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Ripley Co, Factory St, Middletown, Conn.
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Sterling Blower Co, 791 Windsor St, Hartford, Conn.
Trane Co, LaCrosse, Wis.
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Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Burt Mfg Co, 47 E South St, Akron 11, Ohio
Carey, Philip, Mfg Co, Wayne at Cooper, Cincinnati, Ohio
Chelsea Fan & Blower Co, Inc, 639 South Ave, Plainfield, N. J.
Clarage Fan Co, North & Porter Sts, Kalamazoo 16, Mich.
Coppus Engrg Corp, 344 Park Ave, Worcester 2, Mass.
DeBothezat Fans Div, American Machine & Metals, Inc, East Moline, Ill.
DeVilbiss Co, The, 300 Phillips Ave, Toledo 1, Ohio
Diehl Mfg Co, 1142 Finderne Ave, Somerville, N. J.
Fluor Corp Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
General Blower Co, 8610 Ferriss Ave, Morton Grove, Ill.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Hartzell Propeller Fan Co, Downing St, Piqua, Ohio
Ilg Electric Ventilating Co, 2850 N Crawford Ave, Chicago 41, Ill.
International Engrg Inc, P O Box 973, Dayton 1, Ohio
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Koppers Co, Inc, 200 Scott St, Baltimore, Md.
Moore Co, Marceline, Mo.
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Designed to move large volumes of air for straight ventilation and air conditioning work. Medium speed, double curved blade design with non-overloading characteristic means high delivery at low noise levels and efficient use of driving power. Wide range of sizes, all drives and arrangements. Ask for BULLETIN 3675.

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Light, compact, efficient fans for duct-mounted service in ventilation and air conditioning. Improved blade design and straight-line delivery offer users extremely quiet, economical service. Non-overloading. Belted or direct motor drive, in wide range of sizes for work against ¼" to 1½" static. Full details in BULLETIN 3533-C.

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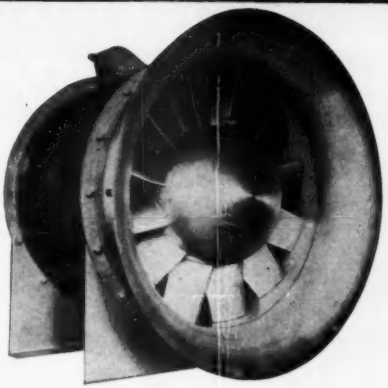
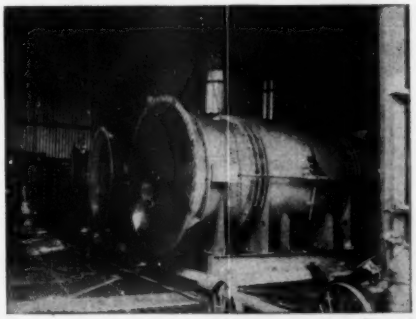


Series 1000 AXIVANE* Fans

Joy Series 1000 Fans constitute the world's most complete line of adjustable-blade, vane-axial fans. In addition to this series, Joy can provide fans of any size to special order. The 136 models in the Series 1000 line provide capacities ranging up to 150,000 C.F.M. at pressures up to 9.6" W.G. They are suitable for both high and low pressure duties.

Adjustable blades are standard equipment on all Series 1000 Fans. The factory blade setting can be quickly changed to provide either a change in volume or a wide pressure range for any constant volume. Adjustable blades permit on-the-job correction for unpredictable duct resistance or poorly installed duct work. Joy AXIVANE* Fans will save power where air demands vary since the blades can be turned to the most efficient setting for any particular duty.



Each of these especially-built Joy AXIVANE Fans passes 50,000 C.F.M. at 75" W.G. In this installation, the compact design resulted in a building one story shorter than would have been required for centrifugal fans of equal capacity.*

*Trademark Registered

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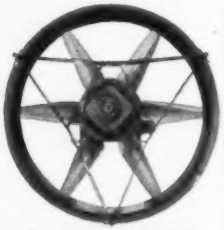
Aerospot and *Dynaflow* fans rate high in efficiency and safety features . . . offer advanced aerodynamic design and rugged construction. The models shown enjoy wide popularity with industrial users. Any unit may be furnished with **explosion-proof** motor and fan blades.



HEAVY DUTY AEROSPOT

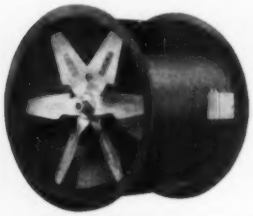
For general or specific ventilation, man-cooling, or parts-cooling . . . to increase personnel efficiency and reduce lost time in cooling and drying hot parts. Portable . . . direction of blast adjustable. Explosion-proof motor, metal conduit and starter can be supplied. Conforms to state safety regulations.

DYNAFLOW UNITS 2-4-6 BLADE TYPES

Six blade model illustrated. For exhausting or blowing against high static pressures. For general ventilation or specific processes where fumes are present. Sizes: 16" to 36" diameter. Capacities: 1240 to 26000 c.f.m. Two and four blade models available for applications at lower static pressures.

EXTENSION ARM DYNAFLOW FOR "HOT" OR "EXPLOSIVE" GASES

For exhausting explosive gases or fumes . . . for circulating "hot" gases up to 350° F. where temperature is too high to permit use of standard or even special motors. Used in heat exchangers, "sweater" ovens, etc. Fans from 16" to 36" diameters.



DUCTYPE UNITS

Direct Drive or Belt Drive

Direct drive model shown, also supplied with belt drive for high temperatures or corrosive air and gas handling. Designed for bolting in any duct run at any point or at either end. Sizes: 16" to 36" fans.

Send for complete specifications and listings of other fans available.

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Fram Corp, 55 Pawtucket Ave, Providence 16, R. I.
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Research Products Co, Filter Div, 1015 E Washington Ave, Madison 3, Wis.
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Central Auto Sprinkler Co, 4th & Cannon Ave, Lansdale, Pa.
Clow, James B & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
C-O Two Fire Equip Co, P O Box 390, U S Highway 1, Newark 1, N. J.
duPont de Nemours, E I & Co, Inc, Wilmington 98, Del.
Goodall Rubber Co, Whitehead Rd, Trenton 4, N. J.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Kidde, Walter & Co Inc, 686 Main St, Belleville 9, N. J.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Polyphase Chem Services Inc, 254 W 54th St, New York 19, N. Y.
Pyrene Mfg Co, 560 Belmont Ave, Newark 8, N. J.
Randolph Labs Inc, 8 E Kinzie St, Chicago 11, Ill.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

FISH SCREENS, ELECTRIC

Electric Fish Screen Co, 1130 N Poinsetta Pl, Hollywood 46, Calif.

FITTINGS, CONDUIT

Crouse Hinds Co, Wolf & 7th St, Syracuse 1, N. Y.
General Electric Co, Construction Materials Div, 1285 Boston Ave, Bridgeport 2, Conn.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
Line Material Co, 700 W Michigan St, Milwaukee 1, Wis.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh 19, Pa.
O-Z Electrical Mfg Co, Inc, 262 Bond St, Brooklyn 2, N. Y.
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Youngstown Sheet & Tube Co, Youngstown 1, Ohio

FITTINGS, PIPE, FLANGED

Alloy Steel Products Co, 1300 W Elizabeth St., Linden, N. J.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Armco Drainage & Metal Products Inc, 703 Curtis St, Middletown, Ohio
Associated Piping & Engrg Co Inc, P O Box 590, Compton, Calif.
Beaird, J B Co, Inc, 6200 St. Vincent Ave, Shreveport, La.
Camco Products Inc, 25 Fox St, New Haven 15, Conn.
Chiksan Co, 330 N Pomona Ave, Brea, Calif.
Clow, James B, & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Frick Co, W Main St, Waynesboro, Pa.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
Jefferson Union Co, Inc, 601 W 26th St, New York 1, N. Y.
Jenkins Conveyors Co, 614 Central Ave, East Orange, N. J.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Key Co, Box 494, East St. Louis, Ill.
M & H Valve & Fittings Co, P O Box 909, Anniston, Ala.
Murray, A B, Co, Inc, 608 Green Lane, Elizabeth, N. J.
National Conveyors Co Inc, 50 Church St, New York 7, N. Y.
National Electric Prod Corp, Chamber of Commerce Bldg, Pittsburgh
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Pittsburgh Piping & Equip Co, 10 43rd St, Pittsburgh 1, Pa.
R-P & C Div Valve, American Chain & Cable Co, Inc, Reading, Pa.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.

FITTINGS, PIPE, THREADED

Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
American Brass Co, 414 Meadow St, Waterbury, Conn.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Beaird, J B Co Inc, 6200 St Vincent Ave, Shreveport, La.
Camco Products Inc, 25 Fox St, New Haven 15, Conn.
Catawissa Valve & Fittings Co, 206 Mill St, Catawissa, Pa.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Chiksan Co, 330 N Pomona Ave, Brea, Calif.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chcago 5, Ill.
Flagg, Stanley G & Co, Inc, 1421 Chestnut St, Phila 2, Pa.
Frick Co, W Main St, Waynesboro, Pa.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Ladish Co, 5440 S Packard Ave, Cudahy, Wis.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Pittsburgh Piping & Equip Co, 10 43rd St, Pittsburgh 1, Pa.
Pittsburgh Steel Co, Dept PG, Grant Bldg, Pittsburgh 30, Pa.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.

FITTINGS, PIPE, WELDING

Alert Boiler & Mfg Co, 315 W Woodbridge St, Detroit 26, Mich.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Armco Drainage & Metal Prod, Inc, 703 Curtis St, Middletown, Ohio
Associated Piping & Engrg Co Inc, P O Box 590, Compton, Calif.
Bonney Forge & Tool Wks, 716 N Meadow St, Allentown, Pa.
Camco Products Inc, 25 Fox St, New Haven 15, Conn.
Catawissa Valve & Fittings Co, 206 Mill St, Catawissa, Pa.
Chiksan Co, 330 N Pomona Ave, Brea, Calif.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Frick Co, W Main St, Waynesboro, Pa.
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Globe Steel Tubes Co, 3839 W Burnham St, Milwaukee 4, Wis.
Graver Tank & Mfg Co Inc, 4809 Tod Ave, East Chicago, Ind.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
International Nickel Co, 67 Wall St, New York 5, N. Y.
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Key Co, Box 494, East St. Louis, Ill.
Ladish Co, 5440 S Packard Ave, Cudahy, Wis.
Midwest Piping & Supply Co Inc, 2nd & Miller Sts, St Louis 4, Mo.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Pittsburgh Piping & Equip Co, 10 43rd St, Pittsburgh 1, Pa.
Taylor Forge & Pipe Works, P O Box 485, Chicago 90, Ill.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Tube Turns Inc, 224 E Broadway, Louisville 1, Ky.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.

FITTINGS, TUBE, COMPRESSION OR SOLDER

American Brass Co, 414 Meadow St, Waterbury, Conn.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Crawford Fitting Co, 884 E 140th St, Cleveland, Ohio
Delta-Star Electric Co, 2400 Fulton St, Chicago 12, Ill.

Belco
WATER CONDITIONING
...and allied equipment for the Power Field
WATER SOFTENERS
Hot Lime Soda
Belcolite
Gravity and Pressure Types
Automatic and Manual
FILTRATION EQUIPMENT
Gravity and Pressure Filters
Automatic and Manual Filters
Siliceous and Non-Siliceous Filters
Iron, Oil, Taste, Odor and Color Removal Filters
DIATOMACEOUS EARTH FILTERS
COAGULATION EQUIPMENT
Slow and Rapid Mix Agitators (Adjustable variable speed)
Settling Tanks
Sludge Removers
ELECTRICAL EQUIPMENT
400 Cycle Generators
Magnetic variable speed motor drives —(no vacuum tubes required)
AC Motors — DC Motors
Generating Sets
Motor Generators
SPECIAL EQUIPMENT
De-ionized (Equivalent to Distilled) Water Equipment
Silica Removal Equipment
Boiler Feed Water Heaters
Deaerators
Depositors
Chemical Dry Feeders
Chemical Pressure Feeders
Oil Separators (Refining process type)
BELCO INDUSTRIAL EQUIPMENT DIVISION
PATERSON 3, NEW JERSEY

Flagg, Stanley G, & Co, Inc, 1421 Chestnut St, Phila 2, Pa.
General Fittings Co, 123 Georgia Ave, Providence 5, R. I.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.
Macwhyte Co, 2944 14th Ave, Kenosha, Wis.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Mueller Co, 512 W Cerro Gordo St, Decatur, Ill.
Murray, A B, Co, Inc, 608 Green Lane, Elizabeth, N. J.
Nugent, Wm W, & Co, Inc, 402 N Hermitage Ave, Chicago 22, Ill.
Parker Appliance Co, 17325 Euclid Ave, Cleveland 12, Ohio
Scovill Mfg Co, 99 Mill St, Waterbury 20, Conn.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Walworth Co, 60 E 42nd St, New York, N. Y.

FITTINGS, WIRE ROPE

American Steel & Wire Div, Rockefeller Bldg, Cleveland 13, Ohio
Broderick & Bascom Rope Co, 4203 N Union Blvd, St Louis 15, Mo.
Colorado Fuel & Iron Corp, Continental Oil Bldg, Denver 1, Colo.
Lamson & Sessions Co, 1971 W 85th St, Cleveland 2, Ohio
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Roebling's John A Sons Co, Trenton 2, N. J.
Wire Rope Slings Div, American Chain & Cable Co, Wilkes-Barre, Pa.

FIXTURES, LIGHTING

Appleton Electric Co, 1701-41 Wellington Ave, Chicago 13, Ill.
Benjamin Elec Co, Des Plaines, Ill.
Crouse Hinds Co, Wolf & Seventh N, Syracuse 1, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Guth, Edwin F, Co, 2615 Washington, St Louis 3, Mo.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh 19, Pa.
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.
Sylvania Electric Products Inc, 1740 Broadway, N. Y. 19, N. Y.

FLAME-FAILURE EQUIPMENT

(See Alarms, Flame-Failure)

FLOATS

Armstrong Cork Co, Liberty St, Lancaster, Pa.
Chicago Float Wks, 2330 S Western Ave, Chicago, Ill.
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Ernst Water Column & Gage Co, 250 S Livingston Ave, Livingston, N. J.
d'Este Div, Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Frick Co, W Main St, Waynesboro, Pa.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
McDonnell & Miller Inc, 3500 N Spaulding Ave, Chicago 18, Ill.
Nicholson, W H, & Co, 125 Oregon St, Wilkes-Barre 1, Pa.
Owens, Henry & Co, Inc, Washington Ave, Cranston 7, R. I.
Reliance Guage Column Co, 5902 Carnegie Ave, Cleveland 3, Ohio
Sexauer, J A Mfg Co, 2503 3rd Ave, New York 51, N. Y.
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.

FLOWMETERS

(See Meters, Flow)

FLYASH COLLECTORS

(See Collectors, Dust, Flyash, Etc)

FREQUENCY CHANGERS

Allis, Louis, Co, 427 E Stewart St, Milwaukee 7, Wis.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Elliott Co, Jeannette, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio
Robbins & Myers, Inc, 1345 Lagonda Ave, Springfield, Ohio
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

FURNACES, BOILER

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 8, Mich.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Combustion Engrg-Superheater Inc, 200 Madison Ave, N. Y. 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detrick, M H Co, 111 W Washington St, Chicago 2, Ill.
Detroit Stoker Co, 5-125 General Motors Bldg, Detroit 2, Mich.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Del.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Johnson Burner Co, S T, 940 Arlington Ave, Oakland 8, Calif.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Riley Stoker Corp, 9 Neponset St, Worcester, Mass.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
U. S. Machine Corp, 320 N C St, Lebanon Ind.

FURNACES, WASTE-FUEL

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 8, Mich.
Combustion Engrg-Superheater Inc, 200 Madison Ave, New York 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detrick, M H Co, 111 W Washington St, Chicago 2, Ill.
Detroit Stoker Co, 5-125 General Motors Bldg, Detroit 2, Mich.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Lee Corporation, 1001 Tatnall St, Wilmington 1, Del.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.

FUSES

Burndy Engrg Co, Norwalk, Conn
Bussmann Mfg Co, University at Jefferson, St Louis 7, Mo.
Chase-Shawmut Co, P O Box 430, Newburyport, Mass
Delta-Star Electric Co, 2400 Fulton St, Chicago 12, Ill.
Economy Fuse & Mfg Co, 2717 N Greenview Ave, Chicago 14, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
General Electric Co, Construction Materials Div, 1285 Boston Ave, Bridgeport 2, Conn.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Jefferson Electric Co, Bellwood, Ill.
Monarch Fuse Co, Ltd, 119 E 1st St, Jamestown, N. Y.
S & C Electric Co, 4435 Ravenswood Ave, Chicago 40, Ill.
Solar Electric Corp, 1948 Myers St, Warren, Pa.
Star Fuse Co, Inc, 235 Canal St, New York 13, N. Y.
Titeflex Inc, 500 Frelinghuysen Ave, Newark 5, N. J.
Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.
Ware Fuse Corp, 4500 W Lake St, Chicago 24, Ill.

GAGES, DRAFT

Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Canton Stoker Corp, 741 Andrews Pl, S W, Canton 1, Ohio
Cleveland Fuel Equip Co, 7316 Associate Ave, Cleveland 9, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Dwyer, F W, Mfg Co, 317 S Western Ave, Chicago, Ill.
Eclipse-Pioneer Div Bendix Aviation Corp, Teterboro, N. J.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Hays Corp, Michigan City 23, Ind.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Oil-Rite Corp, 3478 S 13th St, Milwaukee 7, Wis.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Precision Thermometer & Instr Co, 1401 Brandywine St, Phila 30, Pa.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.

GAGES, LIQUID LEVEL

Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Barton Instrument Corp, 1429 S Eastern Ave, Los Angeles 22, Calif.
Bijur Lubricating Co, Passaic Ave, Rochelle Park, N. J.
Bristol Co, Waterbury 91, Conn.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Crosby Steam Gage & Valve Co, Kendrick St, Wrentham, Mass.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Diamond Power Specialty Corp, Lancaster, Ohio
Ernst Water Column & Gage Co, 250 S Livingston Ave, Livingston, N. J.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Frick Co, W Main St, Waynesboro, Pa.
Hays Corp, Michigan City 23, Ind.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
Huyette, Paul B, Co Inc, 401 N Broad St, Phila 8, Pa.
Inferno Co, 115 Ricou St, Shreveport, La.
Infilco Inc, P O Box 5033, Tucson, Arizona
Jerguson Gage & Valve Co, 87 Fellsway, Somerville, Mass.
Liquidometer Corp, 41-03 36th St, Long Island City 1, N. Y.
Lonergan, J E Co, 211 Race St, Phila 6, Pa.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
Magnetrol Inc, 2110 S Marshall Blvd, Chicago 23, Ill.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marshalltown Mfg Co, 810 E Nevada, Marshalltown, Iowa
Mason-Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Oil-Rite Corp, 2378 Waldo Blvd, Manitowoc, Wis.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
Penberthy Injector Co, Div Buffalo-Eclipse Corp, 1242 Holden Ave, Detroit 2, Mich.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
Reliance Gauge Column Co, 5902 Carnegie Ave, Cleveland 3, Ohio
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Simplex Valve & Meter Co, 6780 Upland St, Phila 42, Pa.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Strahman Valves Inc, 16 Hudson St, New York 13, N. Y.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.
Williams Gauge Co, 2055 Pennsylvania Ave, Pittsburgh 33, Pa.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.
Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

GAGES, PRESSURE

Acragage Co, Milford, Conn.
Air Reduction Co, 60 E 42nd St, New York 17, N. Y.
Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Blackhawk Mfg Co, 5325 W Rogers St, Milwaukee 1, Wis.
Bristol Co, Waterbury 91, Conn.
Cameron Iron Works, P O Box 1212, Houston, Texas
Canton Stoker Corp, 741 Andrews Pl, S W, Canton 1, Ohio
Cleveland Fuel Equip Co, 7316 Associate Ave, Cleveland 9, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crosby Steam Gage & Valve Co, Kendrick St, Wrentham, Mass.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Dockson Corp, 3839 Wabash Ave, Detroit 8, Mich.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Dwyer, F W, Mfg Co, 317 S Western Ave, Chicago, Ill.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Esterline-Angus Co, Inc, 1201 Main St, Indianapolis 6, Ind.
Fischer & Porter Co, 500 County Line Road, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Hays Corp, Michigan City 23, Ind.
Helicoid Gauge Div, American Chain & Cable Co Inc, Bridgeport 2, Conn.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Lincoln Engrg Co, 5701 Natural Bridge Ave, St Louis 20, Mo.
Lonergan, J E Co, 209 Race St, Phila 6, Pa.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P, Corp, Skokie, Ill.
Marshalltown Mfg Co, 810 E Nevada, Marshalltown, Iowa
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Panellit Inc, Panalarm Products Div, 7216 N Clark St, Chicago 26, Ill.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Precision Thermometer & Instr Co, 1401 Brandywine St, Phila 30, Pa.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Sticht, Herman H Co, 27 Park Pl, New York 7, N. Y.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Uehling Instruments Co, 473 Getty Ave, Paterson 3, N. J.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Velan Engrg Co, 6585 Jeanne Mance, Montreal, P.Q, Canada
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.
Weksler Thermometer Corp, 52 W Houston St, New York 12, N. Y.
Williams & Hussey Machine Corp, Wilton, N. H.

GAGES, VACUUM

Acragage Co, Milford, Conn.
Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 91, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crosby Steam Gage & Valve Co, Kendrick St, Wrentham, Mass.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Dwyer, F W Mfg Co, 317 S Western Ave, Chicago, Ill.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Esterline-Angus Co Inc, 1201 Main St, Indianapolis 6, Ind.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Hastings Instrument Co, Super Highway & Pine Ave, Hampton 10, Va.
Hays Corp, Michigan City 23, Ind.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Kinney Mfg Co, 3529 Washington St, Boston 30, Mass.
Lonergan, J E Co, 209 Race St, Phila 6, Pa.
Manning, Maxwell & Moore Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P, Corp, Skokie, Ill.
Marshalltown Mfg Co, 810 E Nevada, Marshalltown, Iowa
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Precision Thermometer & Instr Co, 1401 Brandywine St, Phila 30, Pa.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago, Ill.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Sticht, Herman H Co, 27 Park Pl, New York 7, N. Y.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 3, N. Y.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Velan Engrg Co, 6585 Jeanne Mance, Montreal, P Q, Canada
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.
Weksler Thermometer Corp, 52 W Houston St, New York 12, N. Y.
Williams & Hussey Machine Corp, Wilton, N. H.

GAS, LP

(See Systems, Liquefied Petroleum Gas)

GASKETS, ASBESTOS

Akron Metallic Gasket Co, 150-164 N Union St, Box 911, Akron, Ohio
Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Belmont Packing & Rubber Co, Butler & Sepviva Sts, Phila, Pa.
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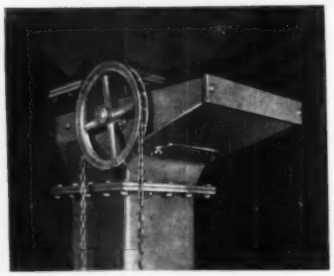

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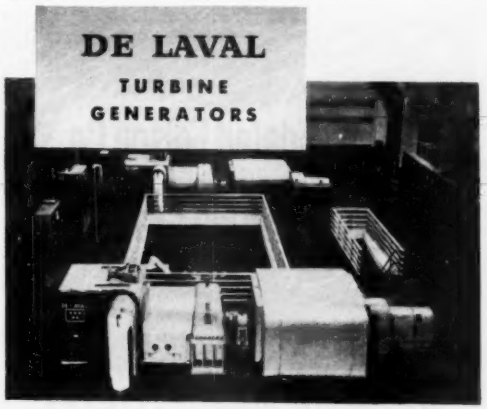
American Coal Burner, 18 E Erie St, Chicago 11, Ill.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave, S E Minneapolis 14, Minn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Erie City Iron Works, 1422 East Ave, Erie, Pa.
Holmes, Robert & Bros, Danville, Ill.
Keystone Grate & Blower Works, Lincoln Highway E, Chambersburg, Pa.
Laclede Stocker Co, 4433 Hunt Ave, St Louis 10, Mo.
Marion Machine, Foundry & Supply Co, Marion, Ind.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Wickes Boiler Co, 512 N Water St, Saginaw, Mich.

GRATES, STATIONARY

American Coal Burner, 18 E Erie St, Chicago 11, Ill.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave, S E, Minneapolis 14
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Hellman Boiler Works, 132 Linden St, Allentown, Pa.
Holmes, Robert, & Bros, Danville, Ill.
Keystone Grate & Blower Works, Lincoln Highway E, Chambersburg, Pa.
Klemp Metal Grating Corp, Co, 6601 S Melvina Ave, Chicago 38, Ill.
Laclede Stoker Co, 4438 Hunt Ave, St Louis 10, Mo.
Marion Machine, Foundry & Supply Co, Marion, Ind.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Titusville Iron Works Co, Div Struthers Wells Corp, Titusville, Pa.
Wickes Boiler Co, 512 N Water St, Saginaw, Mich.

GRATES, TRAVELING

(See Stokers, Traveling Grate)



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GRATING, FLOOR, STEEL

American Abrasive Metals Co, 460 Colt St, Irvington, N. J.
Bates, Walter Co, 500 Mills Rd, Joliet, Ill.
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Borden Metal Products Co, 855 Green Lane, Box 72, Elizabeth, N. J.
Hendrick Mfg Co, P O Box 497, Carbondale, Pa.
Irving Subway Grating Co, 50-09 27th St, Long Island City, N. Y
Kerlow Steel Flooring Co, 222 Culver Ave, Jersey City 5, N. J.
Klemp Metal Grating Corp, Co, 6601 S Melvina Ave, Chicago 38, Ill.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Smith, A O, Corp, 3533 N 27th St, Milwaukee 1, Wis.
Tri-Lok, 5515 Butler St, Pittsburgh 1, Pa.

GREASE, GRAPHITE

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Chard & Howe, 170 Broadway, New York, 38, N. Y.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Cook's Adam Sons Inc, 5 N Stiles St, Linden, N. J.
Dixon, Joseph Crucible Co, 167 Wayne St, Jersey City 3, N. J.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Freedom-Valvoline Oil Co, Freedom, Pa.
Gredag Inc, Niagara Falls, N. Y.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Keystone Lubricating Co, 21st & Clearfield Sts, Phila. 32, Pa.
New York & New Jersey Lubricant Co, 292 Madison Ave, New York 17, N. Y.
Pennsylvania Refining Co, 2686 Lisbon Rd, Cleveland 4, Ohio
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.

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MAIN PLANT — UNION, N. J.

Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Swan-Finch Oil Corp, 30 Rockefeller Plaza, New York 20, N. Y.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

GREASE, LUBRICATING

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Chard & Howe, 170 Broadway, New York 38, N. Y.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Cook's Adam Sons Inc, 5 N Stiles St, Linden, N. J.
Dixon, Joseph Crucible Co, 167 Wayne St, Jersey City 3, N. J.
Dow Corning Corp, Midland, Mich.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Fiske Bros Refining Co, Lubriplate Div, 129 Lockwood St, Newark 5, N. J.
Freedom-Valvoline Oil Co, Freedom, Pa.
Gredag Inc, Niagara Falls, N. Y.
Gulf Oil Corp, Gulf Refining Co, 3800 Gulf Bldg, Pittsburgh 30, Pa.
Houghton, E F & Co, 303 W Lehigh Ave, Philadelphia 33, Pa.
Keystone Lubricating Co, 21st & Clearfield Sts, Phila 32, Pa.
Macmillan Petroleum Corp, 530 W 6th St, Los Angeles, Calif.
N Y & N J Lubricant Co, 292 Madison Ave, N. Y. 17, N. Y.
Pennsylvania Refining Co, 2686 Lisbon Rd, Cleveland 4, Ohio
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.
Sanson, H E & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Sinclair Refining Co, 630 Fifth Ave, New York 20, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Standard Oil Co of Calif, 225 Bush St, San Francisco 20, Calif.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Swan-Finch Oil Corp, 205 E. 42nd St, New York 20, N. Y.
Texas Company, The, 135 E 42nd St, New York 17, N. Y.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Union Oil Co of Calif, 617 W 7th St, Los Angeles 17, Calif.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Waverly Petroleum Products Co, 1724 Chestnut St, Phila 3, Pa.
Xzit Chemical Co, 158 14th St, Hoboken, N. J.

GREASE, ROPE

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Chard & Howe, 170 Broadway, New York 38, N. Y.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Cook's Adam Sons Inc, 5 N Stiles St, Linden, N. J.
Dodge Mfg Corp, Mishawaka, Ind.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Fiske Bros Refining Co, Lubriplate Div, 129 Lockwood St, Newark 5, N. J.
Freedom-Valvoline Oil Co, Freedom, Pa.
Gredag Inc, Niagara Falls, N. Y.
Keystone Lubricating Co, 21st & Clearfield Sts, Philadelphia 32, Pa.
Macwhite Co, 2944 14th Ave, Kenosha, Wis.
N Y & N J Lubricant Co, 292 Madison Ave, New York 17, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio

GUIDES, PIPE ALIGNMENT

(See Hangers, Pipe)

GUNS, METAL SPRAY

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Farquhar, A B Co, York, Pa.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Metallizing Engrg Co Inc, 38-14 30th St, Long Island City 1, N. Y.

HANGERS, PIPE

American District Steam Co, 70 Bryant St, N Tonawanda, N. Y.
Appleton Electric Co, 1701-41 Wellington Ave, Chicago 13, Ill.
Basic Engineers Inc, Prager St at 3rd, Sharpsburg, Pa.
Bergen Pipe Support Corp, 50 Church St, New York, N. Y.
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
General Fittings Co, 123 Georgia Ave, Providence 5, R. I.
Genspring Inc, 500 Fifth Ave, New York 18, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Irving Subway Grating, 50-09 27th St, Long Island City, N. Y.
Korfund Co Inc, 48-48E 32nd Pl, Long Island City 1, N. Y.
Leibfried, C H Mfg Corp 95-101 Guernsey St, Bklyn, N. Y.
Midwest Piping & Supply Co Inc, 2nd & Miller Sts, St Louis 4, Mo.
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Piping Specialties Inc, 114 Liberty St, New York 6, N. Y.
Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.
Tri-Clover Machine Co, 2809 60 St, Kenosha, Wis.
Walworth Co, 60 E 42nd St, New York 17, N. Y.

HANGERS, SHAFT

American Pulley Co, 4200 Wissahickon Ave, Phila 29, Pa.
Bond, Charles Co, 617-623 Arch St, Philadelphia 6, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Continental Gin Co, 4500 Fifth Ave, S Birmingham 2, Ala.
Dodge Mfg Corp, Mishawaka, Ind.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Medart Co, 100 Potomac St, St Louis 18, Mo.
Standard Pressed Steel Co, Jenkintown, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Wood's T B Sons Co, Fifth Ave, Chambersburg, Pa.

HAULERS, CAR

American Engrg Co, Aramingo Ave, & Cumberland St, Philadelphia 25, Pa.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Holmes, Robert, & Bros, Danville, Ill.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

HEAT EXCHANGERS

Adams, R P Co Inc, 237 E Park Drive, Buffalo 17, N. Y.
Aerco Corp, 214 Lafayette Place, Englewood, N. J.
Alberger Heater Co, 280 Chicago St, Buffalo 4, N. Y.
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Aluminum Co of America, Dept 11, 670 Gulf Bldg, Pittsburgh 19, Pa.
American District Steam Co, 70 Bryant St, North Tonawanda, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Andale Co, 1604 Arch St, Phila, Pa.
Bell & Gossett Co, 8200 N Austin Ave, Morton Grove, Ill.
Black, Sivalls & Bryson Inc, Power & Light Bldg, Kansas City 6, Mo.
Bros, Wm, Boiler & Mfg Co, 1057 10th Ave SE, Minneapolis 14, Minn.
Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Brown Fintube Co, Elyria, Ohio
Bush Mfg Co, 179 South St, West Hartford 10, Conn.

Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Coen Co, 40 Boardman Place, San Francisco 3, Calif.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Corning Glass Works, Corning, N. Y.
Croll-Reynolds Engrg Co, Inc, 17 John St, New York 7, N. Y.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Downingtown Iron Works, Inc, Wallace Ave, Downingtown, Pa.
Doyle & Roth Mfg Co, Ft of 23rd St, Brooklyn, N. Y.
Duriron Co Inc, Dayton 1, Ohio
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Fluor Corp, Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Frick Co, W Main St, Waynesboro, Pa.
General American Transportation Corp, Sharon, Pa.
General Electric Co, Air Conditioning Dept, 5 Lawrence St, Bloomfield, N. J.
General Fittings Co, 123 Georgia Ave, Providence 5, R. I.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Graver Tank & Mfg Co Inc, 4809 Todd Ave, East Chicago, Ind.
Hapman-Dutton Co, 622 Gibson St, Kalamazoo 11, Mich.
Harrison Radiator Div, General Motors Corp, Lockport, N. Y.
Hastings Air Conditioning Co Inc, 108 S Colorado Ave, Hastings, Nebr.
Heat-X-Changer Co, Brewster, N. Y.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Hicks, S D & Son Co, 1671 Hyde Park, Boston 36, Mass.
Hynes Elec & Process Heating Div, 1815 W Sedgley Ave, Philadelphia, Pa.
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
Lummus Co, 2 Park Ave, New York, N. Y.
Madden, P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Marion Machine, Foundry & Supply Co, Marion, Ind.
Marley Co, Inc, 3001 Fairfax Rd, Kansas City 15, Kans.
Modine Mfg Co, 1543 De Koven Ave, Racine, Wis.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
National Carbon Co, 30 E 42nd St, New York 17, N. Y.
National Pipe Bending Co, 114 River St, New Haven 13, Conn.
Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.
Nooter Corp, 1400 S 2nd St, St Louis 4, Mo.
Page Boiler Co, 815 Webster Ave, Chicago 14, Ill.
Patterson-Kelley Co Inc, 129 Burson St, East Stroudsburg, Pa.
Porter, H K, Co, Inc, 1932 Oliver Bldg, Pittsburgh 22, Pa.
Prat-Daniel Corp, 2 Meadow St, South Norwalk, Conn.
Pritchard, J F & Co, 908 Grand Ave, Kansas City 6, Mo.
Quaker City Iron Wks, Aramingo Ave & Ontario St, Phila 34, Pa.
Reznor Mfg Co, Power St, Mercer, Pa.
Ross Heater & Mfg Co Inc, 1407 West Ave, Buffalo 13, N. Y.
Schaub, Fred H Engrg Co, 2110 S Marshall Blvd, Chicago 23, Ill.
Sims Co, 1402 E 18th St, Erie, Pa.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wisc.
Steamaster Automatic Boiler Co, 5819 South Compton Ave, Los Angeles 11, Calif.
Stout, David, & Sons, 7016 Manchester Blvd, St. Louis 17, Mo.
Struthers Wells Corp, Warren, Pa.
Taco Heaters Inc, 137 South St, Providence, R. I.
Thermix Corp, Greenwich, Conn.
Thomas, H, Emerson & Associates, P.O. Box 270, Westfield, N. J.
Trane Co, LaCrosse, Wis.
Union Diesel Engine Co, 2121 Diesel St, Oakland 6, Calif.
U. S. Air Conditioning Corp, Como Ave S E at 33rd St, Minneapolis 14, Minn.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Westinghouse Electric Corp, P.O. Box 868, Pittsburgh 30, Pa.
Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.
Worthington Corp, Harrison, N. J.
Young Radiator Co, 709 S Marquette St, Racine, Wis.

HEATERS, AIR, DIRECT-FIRED

Airtherm Mfg Co, 700 S Spring Ave, St Louis 10, Mo.
Campbell, E K Co, 1809 Manchester Ave, Kansas City, Mo.
Combustion Engrg-Superheater Inc, 200 Madison Ave, New York 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Dravo Corp, Dravo Bldg, Pittsburgh 22, Pa.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Lee Corporation, 1001 Tatnall St, Wilmington 1, Del.
Moyer, R E Inc, 10th & Union Sts, Catasauqua, Pa.
Natural Gas Equip Inc, 190 E Glenarm St, Pasadena 2, Calif.
Nelson, Herman Div American Air Filter Co, 1824 3rd Ave, Moline, Ill.
Newcomb-Detroit Co, 5741 Russell St, Detroit 11, Mich.
Peabody Engrg Corp, 530 Fifth Ave, New York 19, N. Y.
Petro-Chem Development Co, 120 E 41st St, New York 17, N. Y.
Prat-Daniel Corp, 2 Meadow St, South Norwalk, Conn.
Reznor Mfg Co, Power St, Mercer, Pa.
Ross, J O Engrg Corp, 350 Madison Ave, New York 17, N. Y.
Silent Glow Oil Burner Corp, 850 Windsor St, Hartford 5, Conn.
Struthers Wells Corp, Warren, Pa.
Thermobloc Div Prat-Daniel Corp, 2 Meadow St, South Norwalk, Conn.
Todd Shipyards Corp, Combustion Equip Div, 8116 45th Ave, Elmhurst, L I, N. Y.
Zink, John, Co, 4401 South Peoria, Tulsa 1, Okla.

HEATERS, BLAST

Airtherm Mfg Co, 700 S Spring Ave, St Louis 10, Mo.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Electromode Corp, 45 Crouch St, Rochester 3, N. Y.
McCord Corp, 2587 E Grand Blvd, Detroit 11, Mich.
McQuay, Inc, 1600 N East Broadway, Minneapolis, Minn.
Modine Mfg Co, 1543 DeKoven Ave, Racine, Wis.
Murray, D J, Mfg Co, 1024 Third St, Wausau, Wis.
Nesbitt, John J Inc, State Rd & Rhawn St, Phila 36, Pa.
Trane Co, LaCrosse, Wis.
Wiegand, E L Co, 7506 Thomas Blvd, Pittsburgh, Pa.

HEATERS, DEAERATING

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American Water Softener Co, 4th & Lehigh Ave, Philadelphia 33, Pa.
Belco Industrial Equip Div Inc, 52 Iowa Ave, Paterson 3, N. J.
Chicago Heater Co, 30 N La Salle St, Chicago, Ill.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Elliott Co, Jeannette, Pa.
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Hoppes Mfg Co, Box 906, Springfield, Ohio
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Schaub, Fred H, Engrg Co, 2110 S Marshall Blvd, Chicago 23, Ill.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Sims Co, 1402 E 18th St, Erie, Pa.
Stickle Steam Specialty Co, 2265 Valley Ave, Indianapolis 1, Ind.
Stout, David & Sons, 7016 Manchester Blvd, St Louis 17, Mo.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.
Worthington Corp, Harrison, N. J.

HEATERS, ENGINE-EXHAUST, GAS

Alco Products Div, American Locomotive, Dunkirk, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Doyle & Roth Mfg Co, Ft of 23rd St, Brooklyn, N. Y.
Sims Co, 1402 E 18th St, Erie, Pa.

HEATERS, FEEDWATER, CLOSED

Alberger Heater Co, 280 Chicago St, Buffalo 4, N. Y.
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American District Steam Co, 70 Bryant St, North Tonawanda, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
Bell & Gossett Co, 8200 N Austin Ave, Morton Grove, Ill.
Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Chicago Heater Co, 30 N LaSalle St, Chicago 2, Ill.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Croll-Reynolds Engrg Co Inc, 17 John St, New York 7, N. Y.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Doyle & Roth Mfg Co, Ft of 23rd St, Brooklyn, N. Y.
Elliott Co, Jeannette, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Griscom-Russell Co, 285 Madison Ave, New York 17, N. Y.
Hoppes Mfg Co, Box 906, Springfield, Ohio
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Lummus Co, 2 Park Ave, New York, N.Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
National Pipe Bending Co, 114 River St, New Haven 13, Conn.
Patterson-Kelley Co, Inc, 129 Burson St, East Stroudsburg, Pa.
Refinite Corp, Box 1312, Omaha, Neb.
Ross Heater & Mfg Co Inc, 1407 West Ave, Buffalo 13, N. Y.
Schaub, Fred H, Engrg Co, 2110 S Marshall Blvd, Chicago 23, Ill.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Sims Co, 1402 E 18th St, Erie, Pa.
Smith, A O, Corp, 3533 N 27th St, Milwaukee 1, Wis.
Stack Heater Co, 80 Batterymarch St, Boston 10, Mass.
Struthers Wells Corp, Warren, Pa.
Taco Heaters Inc, 137 South St, Providence, R. I.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.

HEATERS, FEEDWATER, OPEN

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American Locomotive Co, Schenectady 5, N. Y.
American Water Softener Co, 4th & Lehigh Ave, Philadelphia 33, Pa.
Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Chicago Heater Co, 30 N LaSalle St, Chicago, Ill.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Croll-Reynolds Engrg Co, Inc, 17 John St, New York 7, N. Y.
Elliott Co, Jeannette, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Hoppes Mfg Co, Box 906, Springfield, Ohio
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Refinite Corp, Box 1312, Omaha, Neb.
Sims Co, 1402 E 18th St, Erie, Pa.
Sims Pump Valve Co, Inc, 145 Hudson St, New York 13, N. Y.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.

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HEATERS

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- True counter-flow system assures top heating and deaeration even with sudden load changes.
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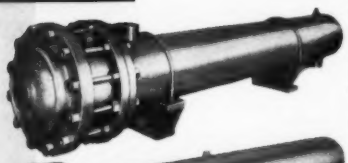
FULL RANGE OF SIZES IN ALL TYPES

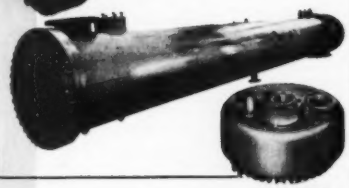
Paracoil
HEAT TRANSFER EQUIPMENT

TUBULAR TYPE (Steam)



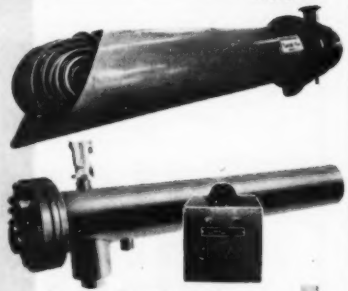
U-TUBE TYPE (Steam or Hot Water)

STRAIGHT TUBE TYPE (Steam)



TANK SUCTION BELL HEATER (Steam or Hot Water)

TANK SUCTION TYPE (Steam or Hot Water)



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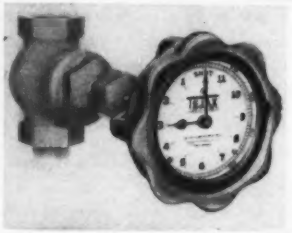

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1. ***Vaporization*** — water for humidification must be vaporized. Your boiler does this the cheapest way.
2. ***Distribution*** — steam is easily dispersed throughout space to be humidified.
3. ***Cleanliness*** — dry steam leaves no residue.
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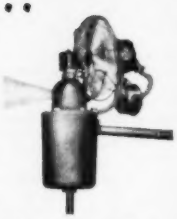

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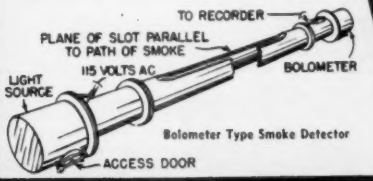
Smoke Density Recorder



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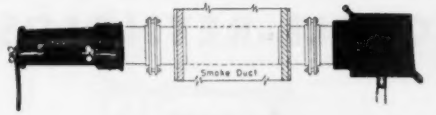

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Catalog EJ-1912

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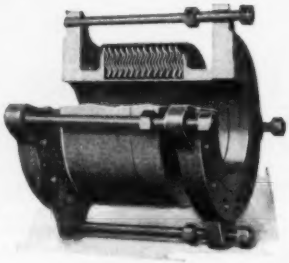

FLEXODISC EXPANSION JOINTS

Thousands of these joints are in service after many years of operation under severe conditions of pressure, temperature, corrosion, movement and vibration.

Outstanding Features:

Exclusive design provides for absorption of all movement components without stressing bellows material beyond elastic limit, thereby assuring unlimited life.

FlexoDisc bellows are made of special alloys as nickel steel, stainless steel and monel metal, the choice of material being determined by service conditions.

The corrugated plates of the bellows are welded in non-oxidizing atmospheres by means of one of several fusion processes. Resulting welds are remarkably strong.

Controlled heat treatment of completed units assures maximum elastic strength.

Send for Bulletin #51.

Also: Heaters, Condensers and Heat Exchangers.

CROLL-REYNOLDS ENGINEERING CO., INC.
17 JOHN STREET, NEW YORK 38, NEW YORK

Refractory & Insulation Corp, 120 Wall St, New York 5, N. Y.
Ric-Wil Co, 1052 Union Commerce Bldg, Cleveland 14, Ohio
Ruberoid Co, 500 Fifth Ave, New York 18, N. Y.
Standard Asbestos Mfg Co, 860 W Evergreen Ave, Chicago 22, Ill.
Union Asbestos & Rubber Co, Dept 1819, 332 S Michigan Ave, Chicago 4, Ill.
Zonolite Co, 135 S La Salle St, Chicago, Ill.

INSULATION, SOUND-DEADENING

Armstrong Cork Co, Liberty St, Lancaster, Pa.
American Felt Co, Glenville, Conn.
Baldwin-Hill Co, 500 Breunig Ave, Trenton 2, N. J.
Barrett Div, Allied Chemical & Dye Corp, 40 Rector St, New York 6, N. Y.
Cork Import Corp, 1 Engle St, Englewood, N. J.
Eagle-Picher Co, American Bldg, Cincinnati 1, Ohio
Ehret Magnesia Mfg Co, Valley Forge, Pa.
Felt Products Mfg Co, 1511 Carroll Ave, Chicago 7, Ill.
Flintkote Co, 30 Rockefeller Plaza, New York 20, N. Y.
Forty-Eight Insulations Inc, Aurora, Ill.
Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Gustin-Bacon Mfg Co, 210 W 10th St, Kansas City, Mo.
Industrial Acoustics Co, 333 Jackson Ave, Bronx 54, N. Y.
Industrial Sound Control Inc, 45 Granby St, Hartford, Conn.
Martell, J W Co, Kankakee, Ill.
Mundet Cork Corp, 7101 Tonnelle Ave, North Bergen, N. J.
National Gypsum Co, 325 Delaware Ave, Buffalo 2, N. Y.
Owens-Corning Fiberglas Corp, Wayne Bldg, Toledo 1, Ohio
Union Asbestos & Rubber Co, Dept 1319, 332 S Michigan Ave, Chicago 4, Ill.
Zonolite Co, 135 S LaSalle St, Chicago 3, Ill.

INSULATORS, ELECTRIC

Armstrong Cork Co, Liberty St, Lancaster, Pa.
General Electric Co, Apparatus Sales Div, 1 River Rd, Schenectady 5, N. Y.
Lapp Insulator Co Inc, 150 Maple St, LeRoy, N. Y.
Line Material Co, 700 W Michigan Ave, Milwaukee 1, Wis.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

INTERCOMMUNICATION SYSTEMS

Executone, Inc, 415 Lexington Ave, New York 17, N. Y.
Gai-Tronics Corp, 412 Washington St, Reading, Pa.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
U. S. Instrument Co, 407 Broad St, Summit, N. J.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

JACKETING, ALUMINUM

Alfol Insulation Co, 155 E 44th St, New York 17, N. Y.
Childers Mfg Co, 625 Yale St, Houston, Tex.

JETS, OVERFIRE

Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 8, Mich.
Canton Stoker Corp, 741 Andrews Pl, S W, Canton 1, Ohio
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 4, Ill.

JOINTS, EXPANSION

Alberger Heater Co, 280 Chicago St, Buffalo 4, N. Y.
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American District Steam Co, 70 Bryant St, N Tonawanda, N. Y.
Badger Fire Extinguisher Co, 624 Somerville Ave, Somerville, Mass.
Badger Mfg Co, 260 Bent St, Cambridge 42, Mass.
Bethlehem Steel Co, Bethlehem, Pa.
Carey, Philip Mfg Co, Wayne at Cooper, Cincinnati 15, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Connery Construction Co, 2nd & Luzerne Sts, Phila 40, Pa.
Cook Electric Co, 2700 Southport Ave, Chicago 14, Ill.
Croll-Reynolds Engrg Co Inc, 17 John St, New York 7, N. Y.
Darcoid Co, Inc, 145 Sixth Ave, New York 13, N. Y.
Flexonics Corp, formerly Chicago Metal Hose Corp, 1315 S Third Ave, Maywood, Ill.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Fulton Sylphon Div Robertshaw-Fulton Controls Co, Knoxville, Tenn.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Goodall Rubber Co, 411 Whitehead Rd, Trenton 4, N. J.
Horn, A C Co, Tenth St & 44th Ave, Long Island City 1, N. Y.
Illinois Engrg Co, Racine Ave & 20th Pl, Chicago 8, Ill.
Jarecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Kinney Engineers, Inc, S P, 201 Second Ave, Carnegie, Pa.
Kopperman, Joseph & Sons, 310-16 New St, Philadelphia 6, Pa.
Lukens Steel Co, Coatesville, Pa.
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Nazareth Steel Fabricators Inc, Nazareth, Pa.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Nooter Corp, 1400 S 2nd St, St Louis 4, Mo.
Piping Specialties Inc, 114 Liberty St, New York 6, N. Y.
Pittsburgh Piping & Equip Co, 10 43rd St, Pittsburgh 1, Pa.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
Q-P Packing Div, Tillotson Rubber Co, Needham Heights 94, Mass.
Royalton Co, Gasport, N. Y.
Seamlex Co, Inc, 41-23 24th St, Long Island City 1, N. Y.
U. S. Gasket Co, 602 N 10th St, Camden, N. J.
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.
Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.
Zallea Bros, 801 Locust St, Wilmington 99, Del.
Zurn, J A Mfg Co, 1801 Pittsburgh Ave, Erie, Pa.

JOINTS, FLEXIBLE

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Badger Fire Extinguisher Co, 624 Somerville Ave, Somerville, Mass.
Barco Mfg Co, 1801 Winnemac Ave, Chicago 40, Ill.
Chiksan Co, 330 N Pomona Ave, Brea, Calif.
Flintkote Co, 30 Rockefeller Plaza, New York 20, N. Y.
Kopperman, Joseph & Sons, 310-16 New St, Philadelphia 6, Pa.
Lord Mfg Co, 1635 W 12th St, Erie, Pa.
Seamlex Co, Inc, 41-23 24th St, Long Island City 1, N. Y.
Thornhill-Craver Co Inc, 1111 Lockwood Dr, Houston, Texas
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.

LACING, BELT

Armstrong Bray Co, 5364 Northwest Highway, Chicago, Ill.
Chicago Belting Co, 125 N Green St, Chicago 7, Ill.
Clipper Belt Lacer Co, 974 Front Ave, N W Grand Rapids 2, Mich.
Fisher Leather Belting Co Inc, 325 N Third St, Philadelphia 6, Pa.
Flexible Steel Lacing Co, 4607 Lexington St, Chicago 44, Ill.
Gates Rubber Co, 999 S Broadway, Denver 17, Colo.
Graton & Knight Co, 356 Franklin St, Worcester 4, Mass.
Rhoads, J E & Sons, 35 N 6th St, Phila 6, Pa.
Schieren, Chas A, 30 Ferry St, New York 38, N. Y.
Sudbury Laboratory, South Sudbury, Mass.
Williams, I B & Sons, 51 Washington St, Dover, N. H.

LARRIES

Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Beaumont Birch Co, 1505 Race St, Phila 2, Pa.

For Electrical Repairmen, Boiler Cleaners, etc.

When a man locks his Corbin *Personal-Safety* Padlock on a switch or valve, he *knows* he's protected against its being prematurely turned on.
No chance for accident . . . no risk of being a forgotten man!

Each electrical repairman, boiler cleaner, etc. should have his own Corbin No. P65R Padlock. *Made especially for safety purposes*, they have a solid die cast case, a shackle-opening height of 2¾ inches, and an attached metal identification tag.

Disc tumbler mechanism has 200 regular key changes and 700 possible changes when so required. Corbin P65R Padlocks can be keyed alike or masterkeyed.

We will gladly help you work out a *Personal-Safety* system based on your specific needs. For further information without obligation, write to:

CORBIN

CORBIN CABINET LOCK
DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Conn.

METERS
FLOW-COAL-FUEL-OIL

BAILEY METERS

FLOW METERS

It doesn't matter what type of fluid you wish to measure — there is a Bailey Fluid Meter for the job. Bailey Meters indicate, record, control, and integrate the flow of practically any fluid from steam to black liquor.

The inherently correct principle upon which the Bailey Fluid Meter operates, combined with a simple, sturdy mechanism, insures exceptional accuracy with unfailing performance.

It is completely described in Bulletin No. 307-B.

Boiler Meter

BOILER METERS

This boiler operating guide will help you to get most economical performance from your boiler. Records of Steam Flow, Air Flow and Flue Gas Temperature are all included on one chart, to show at a glance whether best combustion efficiency and furnace conditions exist.

Write for Bulletin No. 46-B.

COAL METERS

Human errors and uncertainties in weighing, due largely to changes in moisture content of coal, are eliminated by the Bailey Coal Meter.

It operates on the volumetric principle of measurement, to give a reliable check on the amount of coal delivered to each stoker or pulverizer in a plant, showing results within 1 per cent to 3 per cent of actual coal weight.

This versatile measuring device is not limited to coal alone. It is ideal for measurement of other granular materials such as ore, crushed rock, and cement clinker.

Described in Bulletin No. 221-A.

Coal Meter

FUEL-OIL METERS

The Bailey Fuel-Oil Meter (Area Type) eliminates the need for primary elements and connecting piping. Installed directly in the fuel line, it transmits measurements to standard Bailey electronic receivers.

For return type burners, measurement of fuel burned is accomplished by an electrical circuit which subtracts return line rate of flow from supply line rate of flow.

Write for Bulletin 233.

Area Meter Transmitter

BAILEY METER COMPANY
1016 IVANHOE ROAD CLEVELAND 10, OHIO

Bergen Point Iron Works, Foot of W 5th St, Bayonne, N. J.
Brady Conveyors Corp, 20 W Jackson Blvd, Chicago 4, Ill.
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Fairfield Engrg Co, 307 Barnhart St, Marion, Ohio
Gifford-Wood Co, 5 Hill St, Hudson, N. Y.
Holmes, Robert, & Bros, Danville, Ill.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Richardson Scale Co, Clifton, N. J.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

LEATHERS, PUMP, HYDRAULIC

Alexander Bros, 406 N 3rd St, Phila 7, Pa.
Baldwin Belting Inc, 74-76 Murray St, New York 7, N. Y.
Chicago Belting Co, 125 N Green St, Chicago 7, Ill.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Gates Rubber Co, 999 S Broadway, Denver 17, Colo.
Graton & Knight Co, 356 Franklin St, Worcester 4, Mass.
International Packing Corp, Bristol, N. H.
Rhoads, J E & Sons, 35 N 6th St, Philadelphia 6, Pa.
Schieren, Chas A Co, 30 Ferry St, New York 38, N. Y.
Sterling Packing & Gasket Co, 1701 Nance St, Houston 10, Texas
Whiting Leather & Belting Co, 9 Murray St, New York 7, N. Y.
Williams, I B & Sons, 51 Washington St, Dover, N. H.

LOCKS, PADLOCKS, SAFETY

Corbin Cabinet Lock Div, American Hardware Co, New Britain, Conn.
Master Lock Co, 2600 N 32nd St, Milwaukee, Wis.
Norwalk Lock Co, Div Segal Lock & Hardware Co, 397 Broadway, New York, N. Y.
Sargent & Co, 45 Water St, New Haven, Conn.
Yale & Towne Mfg Co, 200 Henry St, Stamford, Conn.

LOUVERS AND SHUTTERS

Air & Refrigeration Corp, 475 Fifth Ave, New York 17, N. Y.
Arex Co, 4317 Ravenswood Ave, Chicago 13, Ill.
Burt Mfg Co, 47 E South St, Akron 11, Ohio
Chelsea Fan & Blower Co, Inc, 639 South Ave, Plainfield, N. J.
Grinnell Co, Inc, 260 W Exchange St, Providence 1, R. I.
Leahy Mfg Co, 1804 E 8th St, Los Angeles 21, Calif.
Minneapolis - Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis - Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Nelson, Herman Div, American Air Filter Co, 1824 3rd Ave, Moline, Ill.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio

LP GAS

(See Systems, Liquefied Petroleum Gas)

LUBRICANTS, SYNTHETIC

Acheson Colloids Co, Div of Acheson Industries, Inc.
Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Dow Corning Corp, Midland, Mich.
Fiske Bros Refining Co, Lubriplate Div, 129 Lockwood St, Newark 5, N. J.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Shell Oil Co Inc, 50 W 50th St, New York 20, N. Y.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

LUBRICATORS, MECHANICAL

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Bijur Lubricating Co, Passaic Ave, Rochelle Park, N. J.
Farval Corp, 3262 E 80th St, Cleveland 4, Ohio
Gits Bros Mfg Co, 1864 S Kilbourne Ave, Chicago 23, Ill.
Gray Co, 60 11th Ave SE, Minneapolis 13, Minn.
Hills-McCanna Co, 2456 W Nelson St, Chicago 18, Ill.
Lincoln Engrg Co, 5701 Natural Bridge Ave, St. Louis 20, Mo.
Madison Kipp Co, 200 Waubesa, Madison 4, Wis.
Manzel Div, Frontier Industries Inc, 315 Babcock St, Buffalo 10, N. Y.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Oil-Rite Corp, 2378 Waldo Blvd, Manitowoc, Wis.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.
D T Williams Valve Co Div Schaible Co, 1086 Summer St, Cincinnati, Ohio

LUBRICATORS, SIGHT FEED

Bowser Inc, Fort Wayne 2, Ind.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Gits Bros Mfg Co, 1846 S Kilbourne Ave, Chicago 23, Ill.
Hills-McCanna Co, 2456 W Nelson St, Chicago 18, Ill.
Lonergan, J E Co, 211 Race St, Phila 6, Pa.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
Madison Kipp Co, 200 Waubesa, Madison 4, Wis.
Manzel Div, Frontier Industries Inc, 315 Babcock St, Buffalo 10, N. Y.
Nugent, Wm W, & Co Inc, 402 N Hermitage Ave, Chicago 22, Ill.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Oil-Rite Corp, 2378 Waldo Blvd, Manitowoc, Wis.
Power Piping Div, Blaw-Knox Co, 1525 Pennsylvania Ave, Pittsburgh 12, Pa.
Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.

MANOMETERS

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Inst & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Dwyer, F W Mfg Co, 317 S Western Ave, Chicago, Ill.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Precision Thermometer & Instr Co, 1401 Brandywine St, Phila 30, Pa.
Refinite Co, Box 1312, Omaha, Neb.
Simplex Valve & Meter Co, 6870 Upland St, Philadelphia 42, Pa.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Thermo Instruments Co, P O Box 336, Belmont, Calif.
Velan Engrg Co, 6585 Jeanne Mance, Montreal, P Q, Canada
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.

MEGOHMMETERS

Associated Research Inc, 3758 W Belmont Ave, Chicago 18, Ill.
Beckman Instruments Inc, 820 Mission St, South Pasadena, Calif.
Biddle, James G Co, 1316 Arch St, Philadelphia 7, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Sticht, Herman H, Co, 27 Park Pl, New York 7, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

METALS, ACID-RESISTANT

Ampco Metal Inc, 1701 S 38th St, Milwaukee 6, Wis.
Armco Steel Corp, 703 Curtis St, Middletown, Ohio
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Division Lead Co, 836 W Kinzie St, Chicago 22, Ill.
Duriron Co Inc, Dayton 1, Ohio
Electro Alloys Div, American Brake Shoe Co, Elyria, Ohio
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.
Lukens Steel Co, Coatesville, Pa.
Mallory, P R & Co, 3029 E Washington St, Indianapolis 6, Ind.
Murray, A B Co Inc, 608 Green Lane, Elizabeth, N. J.

Radio Frequency Laboratories Inc, Boonton, N. J.
Sivyer Steel Casting Co, 1675 S 43rd St, Milwaukee 14, Wis.
U S Steel Co, 525 Wm Penn Place, Pittsburgh 30, Pa.

METALS, BEARING

American Brass Co, 414 Meadow St, Waterbury 20, Conn.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 6, Wis.
Bearium Metals Corp, 268 State St, Rochester 4, N. Y.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Childers Mfg Co, 625 Yale St, Houston, Texas
Division Lead Co, 836 W Kinzie St, Chicago 22, Ill.
Eagle-Picher Co, American Bldg, Cincinnati 1, Ohio
Federated Metals Div, American Smelting & Refining, 120 Broadway, New York, N. Y.
Koppers Co, Inc, 200 Scott St, Baltimore, Md.
Magnolia Metal Co, 18 W Jersey St, Elizabeth 4, N. J.
Mallory, P R & Co Inc, 3029 E Washington St, Indianapolis 6, Ind.
Tennessee Coal Iron Div, U S Steel Co, Fairfield, Ala.

METALS, CORROSION-RESISTANT

Allegheny Ludlum Steel Corp, Oliver Bldg, Pittsburgh 22, Pa.
Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
American Brass Co, 414 Meadow St, Waterbury 20, Conn.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 6, Wis.
Armco Steel Corp, 703 Curtis St, Middletown, Ohio
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Electro Alloys Div, American Brake Shoe Co, Elyria, Ohio
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
Inland Steel Co, 38 S Dearborn St, Chicago 3, Ill.
International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.
Jones & Laughlin Steel Corp, 3rd Ave & Ross St, Pittsburgh 30, Pa.
Lukens Steel Co, Coatesville, Pa.
Mallory, P R & Co Inc, 3029 E Washington St, Indianapolis 6, Ind.
Murray, A B, Co Inc, 608 Green Lane, Elizabeth, N. J.
Orange Roller Bearing Co, 557 Main St, Orange, N. J.
Revere Copper & Brass Inc, 230 Park Ave, New York 17, N. Y.
Sivyer Steel Casting Co, 1675 S 43rd St, Milwaukee 14, Wis.
Scovill Mfg Co, 99 Mill St, Waterbury 28, Conn.
Tennessee Coal, Iron Div, U S Steel Co, Fairfield, Ala.
U S Steel Co, 525 Wm Penn Place, Pittsburgh 30, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

METALS, HEAT-RESISTANT

Allegheny Ludlum Steel Corp, Oliver Bldg, Pittsburgh 22, Pa.
Armco Steel Corp, 703 Curtis St, Middletown, Ohio
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Electro Alloys Div, American Brake Shoe Co, Elyria, Ohio
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.
Lukens Steel Co, Coatesville, Pa.
Mallory, P R & Co Inc, 3029 E Washington St, Indianapolis 6, Ind.
Murray, A B, Co Inc, 608 Green Lane, Elizabeth, N. J.
Sivyer Steel Casting Co, 1675 S 43rd St, Milwaukee 14, Wis.
Tennessee Coal, Iron Div, U S Steel Co, Fairfield, Ala.
U S Steel Co, 525 Wm Penn Place, Pittsburgh 30, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

METERS, AIR, GAS

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Brooks Rotameter Co, Box 432, Lansdale, Pa.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Croll-Reynolds Co Inc, 17 John St, New York 7, N. Y.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Hastings Instrument Co, Super Highway & Pine Ave, Hampton 10, Va.
Hays Corp, Michigan City 23, Ind.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
Roots-Connersville Blower Corp, 900 W Mount St, Connersville, Ind.
Simplex Valve & Meter Co, 6870 Upland St, Philadelphia 42, Pa.

METERS, CO_2

(See Analyzers, CO_2; Recorders, CO_2)

METERS, COAL

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Builders-Providence Inc, 345 Harris Ave, Providence 1, R. I.
Fairfield Engrg Co, 307 Barnhart St, Marion, Ohio
Omega Machine Co, 245 Harris Ave, Providence 1, R. I.
Stock Equip Co, 745 P Hanna Bldg, Cleveland 15, Ohio

METERS, CONDENSATION

American District Steam Co, 70 Bryant St, North Tonawanda, N. Y.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Henszey Co, 202½ Water St, Watertown, Wis.
Simplex Valve & Meter Co, 6870 Upland St, Philadelphia 42, Pa.

METERS, DEMAND, ELECTRIC

General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

METERS, FLOW

Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Barton Instrument Corp, 1429 S Eastern Ave, Los Angeles 22, Calif.
Black, Sivalls & Bryson Inc, Power & Light Bldg, Kansas City 6, Mo.
Bowser Inc, Fort Wayne 2, Ind.
Bristol Co, Waterbury 91, Conn.
Brooks Rotameter Co, Box 432, Lansdale, Pa.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
Eisler Engrg Co, Inc, 757 S 13th St, Newark 3, N. J.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Hagan Corp, 323 Fourth Ave, Hagan Bldg, Pittsburgh 30, Pa.
Hastings Instrument Co, Super Highway & Pine Ave, Hampton 10, Va.
Hays Corp, Michigan City 23, Ind.
Henszey Co, 202½ Water St, Watertown, Wis.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Mason-Neilan Regulator Co, 1186 Adam St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co 2753 Fourth Ave S, Minneapolis 8, Minn
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Industrial Instr. Corp, 4110 Haverford Ave, Philadelphia 4, Pa.
Refinite Corp, Box 1312, Omaha, Neb.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 37, Ill.
Rockwell Mfg Co, 400 Lexington Ave, Pittsburgh, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Simplex Valve & Meter Co, 6870 Upland St, Philadelphia 42, Pa.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.

METERS, FREQUENCY

Biddle, James G Co, 1316 Arch St, Philadelphia 7, Pa.
Beckman Instruments Inc, 820 Mission St, South Pasadena, Calif.
Bristol Co, Waterbury 91, Conn.
Cambridge Instrument Co Inc, 3007 Grand Central Terminal, New York 17, N. Y.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Hanson-Van Winkle-Munning Co, Church St, Matawan, N. J.
LaMotte Chemical Products Co, Towson, Baltimore 4, Md.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
National Technical Labs, 820 Mission St, South Pasadena, Calif.
Photovolt Corp, 95 Madison Ave, New York 16, N. Y.
Taylor, W R & Co, 7300 York Road, Baltimore 4, Md.
Esterline-Angus Co Inc, 1201 Main St, Indianapolis 6, Ind.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

METERS, FUEL-OIL

Bowser Inc, Fort Wayne 2, Ind.
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
National Airoil Burner Co, 1276 E Sedgley Ave, Philadelphia 34, Pa.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Worthington Corp, Harrison, N. J.

METERS, pH

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio

METERS, WATER

Buffalo Meter Co, 2917 Main St, Buffalo 14, N. Y.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Henszey Co, 202½ Water St, Watertown, Wis.
Refinite Corp, Box 1312, Omaha, Neb.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
Simplex Valve & Meter Co, 6870 Upland St, Philadelphia 42, Pa.
Worthington Corp, Harrison, N. J.

METERS, WATT-HOUR

General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Sangamo Electric Co, Springfield, Ill.
Sticht, Herman H Co, 27 Park Place, New York 7, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTOR-GENERATORS

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Allis, Louis Co, 427 E Stewart St, Milwaukee 7, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St. Louis 3, Mo.
Columbia Electric Mfg Co, 4519 Hamilton Ave, Cleveland 14, Ohio
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Elliott Co, Ridgeway, Pa, and Ampere, N. J.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.

FEATURES

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General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Hanson-Van Winkle-Munning Co, Church St, Matawan, N. J.
Hobart Bros Co, Hobart Square, Troy 1, Ohio
Holtzer-Cabot Div National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Kato Engineering Co, 122 Maxfield St, Mankato, Minn.
Pyle-National Co, 1334 N Kostner Ave, Chicago 5, Ill.
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland, 10, Ohio
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTOR STARTERS, AC, DC

Allen-Bradley Co, 1326 S 2nd St, Milwaukee 4, Wis.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Arrow-Hart & Hegeman Electric Co, 103 Hawthorn St, Hartford 6, Conn.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Crouse Hinds Co, Wolf & Seventh N Syracuse 1, N. Y.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Electric Machy Mfg Co, 1331 NE Tyler St, Minneapolis 13, Minn.
General Electric Co, Apparatus Sales Div Schenectady 5, N. Y.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Penn Controls Inc, Goshen, Ind.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Trumbull Electric Dept, General Electric Co, 41 Woodford Ave, Plainville, Conn.
Ward Leonard Electric Co, 100 South St, Mt. Vernon, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, AC

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Allis, Louis Co, 427 E Stewart St, Milwaukee 7, Wis.
Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St Louis 3, Mo.
Delco Products Div, General Motors Corp, 329 E First St, Dayton 1, Ohio
Diehl Mfg Co, 1142 Finderne Ave, Somerville, N. J.
Electric Machy Mfg Co, 1331 E Tyler St, Minneapolis 13, Minn.
Electric Products Co, 1720 Clarkstone Rd, Cleveland 12, Ohio
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Elliott Co, Jeannette, Pa.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Kato Engineering Co, 122 Maxfield St, Mankato, Minn.
LeTourneau, R G, Inc, Peoria, Ill.
Lima Electric Motor Co, Findlay Rd, Lima, Ohio
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Raytheon Mfg Co, Waltham 54, Mass.
Reliance Elec & Engrg Co, 1068 Ivanhoe Rd, Cleveland 10, unio
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
U S Electrical Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, ADJUSTABLE SPEED, VARIABLE SPEED

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Allis, Louis Co, 427 E Stewart St, Milwaukee 7, Wis.
Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Berry Div, Oliver Iron & Steel Corp, S 10th & Muriel Sts, Pittsburgh 3, Pa.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St Louis 3, Mo.
Dynamatic Corp, 3307 - 14th Ave, Kenosha, Wis.
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Elliott Co, Jeannette, Pa.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Holtzer-Cabot Div, National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Ideal Elec & Mfg Co, E First St, Mansfield, Ohio
Kato Engineering Co, 122 Maxfield St, Mankato, Minn.
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, Ohio
Smith, A O Corp, 3533 N 27th St, Milwaukee, Wis.
Speed Control Corp, 1450 Depot St, Wickliffe, Ohio
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
Sterling Electric Motors Inc, 5401 Anaheim-Telegraph Rd, Los Angeles 22, Calif.
U S Electric Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, DC

Allis-Chalmers Mfg Co. 952 S 70th St, Milwaukee 1, Wis.
Allis, Louis Co, 427 E Stewart St, Milwaukee 7, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St. Louis 3, Mo.
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Elliott Co, Ridgeway, Pa, and Ampere, N. J.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Holtzer-Cabot Div, National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Kato Engineering Co, 122 Maxfield St, Mankato, Minn.
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, unio
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
U S Electrical Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, FRACTIONAL HP

Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Barber-Colman Co, Rockford, Ill.
Century Electric Co, 1806 Pine St, St. Louis 3, Mo.
Delco Products Div General Motors Corp, 329 E First St, Dayton 1, Ohio
Diehl Mfg Co, 1142 Finderne Ave, Somerville, N. J.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Holtzer-Cabot Div, National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Sterling Electric Motors Inc, 5401 Anaheim-Telegraph Rd, Los Angeles 22, Calif.
U S Electrical Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, INDUCTION

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Allis, Louis Co, 427 E Stewart St, Milwaukee 7, Wis.
Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Barber-Colman Co, Rockford, Ill.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St. Louis 3, Mo.
Delco Products Div General Motors Corp, 329 E First St, Dayton 1, Ohio
Diehl Mfg Co, 1142 Finderne Ave, Somerville, N. J.
Eclipse-Pioneer Div, Bendix Aviation Corp, Teterboro, N. J.
Electric Machy Mfg Co, 1331 NE Tyler St, Minneapolis 13, Minn.
Electro-Dynamic Div, Electric Boat Co, Bayonne, N. J.
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Elliott Co, Ridgeway, Pa, and Ampere, N. J.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Holtzer-Cabot Div, National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Lima Electric Motor Co, Findlay Rd, Lima, Ohio
Peerless Electric Co, 1360 W Market St, Warren, Ohio
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, Ohio
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
Sterling Electric Motors Inc, 5401 Anaheim-Telegraph Rd, Los Angeles 22, Calif.
U S Electrical Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOTORS, SYNCHRONOUS

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Atlantic Gear Wks, 200 Lafayette St, New York 12, N. Y.
Barber-Colman Co, Rockford, Ill.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Century Electric Co, 1806 Pine St, St. Louis 3, Mo.
Eclipse-Pioneer Div, Bendix Aviation Corp, Teterboro, N. J.
Electric Machy Mfg Corp, 1331 NE Tyler St, Minneapolis 13, Minn.
Electric Products Co, 1717 Clarkstone Rd, Cleveland 12, Ohio
Elliott Co, Ridgeway, Pa, and Ampere, N. J.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Holtzer-Cabot Div, National Pneumatic Co, 125 Amory St, Boston 19, Mass.
Ideal Electric & Mfg Co, E First St, Mansfield, Ohio
Robbins & Myers, 1345 Lagonda Ave, Springfield, Ohio
Smith, A O, Corp, 3533 N 27th St, Milwaukee 1, Wis.
Star-Kimble Motor Div, 200 Bloomfield Ave, Bloomfield, N. J.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

MOVERS, CAR

Robbins & Myers, 1345 Lagonda Ave, Springfield, Ohio
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

MUFFLERS, INTAKE, EXHAUST

Buffalo Pressed Steel Co, Inc, North Meridian Road, Youngstown 9, Ohio
Burgess-Manning Co, 749 E Park Ave, Libertyville, Ill.
Drico Industrial Corp, 559 W 35th St, New York 6, N. Y.
Fluor Corp, Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Industrial Acoustics Co, 333 Jackson Ave, Bronx 54, N. Y.
Industrial Sound Control Inc, 45 Granby St, Hartford, Conn.
Maxim Silencer Co, 85 Homestead Ave, Hartford 1, Conn.

NIPPLES

(See Fittings, Pipe)

NOZZLES, SPRAY

Aquadyne Corp, 441 Lexington Ave, New York 17, N. Y.
Automatic Sprinkler Corp of America, Jones & Brittain Sts, Youngstown 1, Ohio
Bahnson Co, 1001 S Marshall St, Winston-Salem N. C.
Binks Mfg Co, 3114-40 Carrol Ave, Chicago 12, Ill.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Carr, Clifford H Co, 614 W 67th St, Kansas City 5, Mo.
Central Automatic Sprinkler Co, 4th & Cannon Ave, Lansdale, Pa.
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Deister Concentrator Co, 901 Glasgow Ave, Ft Wayne 1, Ind.
De Vilbiss Co, 300 Phillips Ave, Toledo 1, Ohio
Eddington Metal Specialty Co, P O Box K, Eddington, Pa.
Farquhar, A B Co, York, Pa.
Fluor Corp Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.

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See other Yarway Advertisements on pages, 74, 105, 108, 115
YARNALL WARING CO.
100 Mermaid Ave., Phila. 18, Pa.

Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Johnson Mfg Co, Fox & Holly Sts, Seattle 8, Wash.
Kinney Engineers, Inc, S. P, 201 Second Ave, Carnegie, Pa.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Marley Co, Inc, 3001 Fairfax Rd, Kansas City 15, Kans.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Monarch Mfg Works, Inc, 2501 E Ontario St, Phila 34, Pa.
National Airoil Burner Co, 1276 E Sedgley Ave, Philadelphia 34, Pa.
Phillips Cooling Tower Co Inc, 114 Liberty St, NYC 6, N. Y.
Pritchard J F & Co, 908 Grand Ave, Kansas City 6, Mo.
Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Spraying Systems Co, 3201 Randolph St, Bellwood, Ill.
Supreme Electric Products Corp, 194 Vassar St, Rochester 7, N. Y.
Water Cooling Equip Corp, New Hampshire & Webster Rd, St. Louis 23, Mo.
Yarnall-Warning Co, Chestnut Hill, Philadelphia 18, Pa.

OBSERVATION PORTS, BOILERS

Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detroit Stoker Co, 5-125 General Motors Bldg, Detroit 2, Mich.
Green, A P, Fire Brick Co, Mexico, Mo.
Kennedy Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
National Airoil Burner Co, 1276 E Sedgley Ave, Philadelphia 34, Pa.
Pilbrico Jointless Firebrick Co, 1800 Kinsbury St, Chicago 14, Ill.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Reintjes, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Sims Co, 1402 E 18th St, Erie, Pa.

OHMMETERS

Biddle, James G Co, 1316 Arch St, Philadelphia 7, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Sticht, Herman H, Co, 27 Park Pl, New York 7, N. Y.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

OIL BURNING SYSTEMS, INDUSTRIAL

Anthony Co, 47-33 Fifth St, Long Island City, N. Y.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Coen Co, 40 Boardman Pl, San Francisco 3, Calif.
Crotty Mfg Co, 133-15 35th Ave, Flushing, N. Y.
Faber Engrg Co, Amber & Westmoreland Sts, Phila 34, Pa.
Forney Engrg Co, 2705 Hawes St, Dallas, Texas
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Hauck Mfg Co, 136 10th St, Brooklyn 15, N. Y.
International Combustion Corp, 436 Pearl St, N. Y. 7, N. Y.
Johnson, S T, Burner Co, 940 Arlington Ave, Oakland 8, Calif.
Leahy Mfg Co, 1804 E 8th St, Los Angeles 21, Calif.
Lientz, B P Mfg Co, 210 W 8th St, Kansas City, Mo.
Lockett, A M & Co, Ltd, Whitney Bldg, New Orleans 7, La.
National Airoil Burner Co, 1276 E Sedgley Ave, Philadelphia 34, Pa.
North American Mfg Co, 4455 E 71st St, Cleveland 5, Ohio
Peabody Engrg Corp, 580 Fifth Ave, New York 19, N. Y.
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Schutte & Koertlng Co, Cornwells Heights, Bucks County, Pa.
Staples & Pfeiffer, 528 Bryant St, San Francisco 7, Calif.
Superior Combustion Industries Inc, Times Bldg, New York 18, N. Y.
Todd Shipyards Corp, Combustion Equip Div, 8116 45th Ave, Elmhurst, N. Y.
York-Shipley Inc, York, Pa.

OIL TREATMENT, FUEL

Aiken-Murray Corp, 131 E 23rd St, New York 10, N. Y.
Ailaddin Laboratories Inc, 68 William St, New York 5, N. Y.
Brooks Chemicals Inc, 3304 E 87th St, Cleveland, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Dacar Chemical Prods Inc, 1007 McCartney St, Pittsburgh 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Disinfectol Co, 635 Lisbon Ave, Buffalo 15, N. Y.
Dominion Chemical Co Inc, 11 W 42nd St, Dept A, New York 18, N. Y.
Drew, E F & Co, 15 E 26th St, New York 10, N. Y.
Feedwater Inc, 140 Cedar St, New York 6, N. Y.
Hilliard Corp, 120 W 4th St, Elmira, N. Y.
Lubaid Co, 3270 S Third St, Milwaukee, Wis.
Madden, P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Maxfal Chemical Co, 33 W 42nd St, New York 18, N. Y.
National Airoil Burner Co, 1276 E Sedgley Ave, Philadelphia 34, Pa.
Perolin Co Inc, 10 E 40th St, New York 16, N. Y.
Petroleum Solvents Corp, 331 Madison Ave, New York, N. Y.
Polyphase Chemical Service Inc, 150 Nassau St, New York 38, N. Y.
Sanson, H E & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Sharples Corp, 2300 Westmoreland St, Philadelphia 40, Pa.
Standard Chemicals Inc, 36 Summer St, Natick, Mass.
Sudbury Laboratory, South Sudbury, Mass.
Suhm Co, 4701 W Electric Ave, Milwaukee, 14, Wis.
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.

OILING SYSTEMS, LUBRICATION

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Bijur Lubricating Co, Passaic Ave, Rochelle Park, N. J.
Bowser Inc, Fort Wayne 2, Ind.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
De Laval Separator Co, Poughkeepsie, N. Y.
Gray Co Inc, 60 11th Ave, SE, Minneapolis 13, Minn.
Lee Corporation, 1001 Tatnall St, Wilmington 1, Del.
Lincoln Engrg Co, 5701 Natural Bridge Ave, St. Louis 20, Mo.
Madison Kipp Co, 200 Waubesa, Madison 4, Wis.
Manzel Div, Frontier Industries Inc, 315 Babcock St, Buffalo 10, N. Y.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Nugent, Wm W, & Co Inc, 402 N Hermitage Ave, Chicago 22, Ill.
Sanson, H E & Sons, Inc, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Sharples Corp, 2300 Westmoreland St, Philadelphia 40, Pa.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.

OILS, FUEL

Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Freedom-Valvoline Oil Co, Freedom, Pa.
Gulf Oil Corp, Gulf Refining Co, 3800 Gulf Bldg, Pittsburgh 30, Pa.
Macmillan Petroleum Corp, 530 W 6th St, Los Angeles 14, Calif.
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.
Shell Oil Co Inc, 50 W 50th St, New York 20, N. Y.
Sinclair Refining Co, 630 Fifth Ave, New York 20, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sprague, C H & Son Co, 10 Postoffice Sq, Boston 9, Mass.
Standard Oil Co of Calif, 225 Bush St, San Francisco 20, Calif.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Texas Company, The, 135 E 42nd St, New York 17, N. Y.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Union Oil Co of Calif, 617 W 7th St, Los Angeles 17, Calif.

OILS, LUBRICATING

Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Chard & Howe, 170 Broadway, New York 38, N. Y.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Cook's Adam Sons Inc, 5 N Stiles St, Linden, N. J.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Fiske Bros Refining Co, Lubriplate Div, 129 Lockwood St, Newark 5, N. J.
Freedom-Valvoline Oil Co, Freedom, Pa.
Gerin Corp, Red Bank, N. J.
Gredag Inc, Niagara Falls, N. Y.
Gulf Oil Corp, Gulf Refining Co, 3800 Gulf Bldg, Pittsburgh 30, Pa.
Houghton, E F & Co, 303 W Lehigh Ave, Philadelphia 33, Pa.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Keystone Lubricating Co, 21st & Clearfield Sts, Philadelphia 32, Pa.
Macmillan Petroleum Corp, 530 W 6th St, Los Angeles 14, Calif.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
N Y & N J Lubricant Co, 292 Madison Ave, New York 17, N. Y.
Pennsylvania Refining Co, 2686 Lisbon Rd, Cleveland 4, Ohio
Permatex Co, 1702 - 1720 Ave Y, Brooklyn 35, N. Y.
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.
Ridge Tool Co, 400 Clark St, Elyria, Ohio
Sanson & Sons, Inc, H E, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Shell Oil Co Inc, 50 W 50th St, New York 20, N. Y.
Sinclair Refining Co, 630 Fifth Ave, New York 20, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
Sonneborn, L Sons, Inc, 300 Fourth Ave, New York 10, N. Y.
Standard Oil Co of Calif, 325 Bush St, San Francisco 20, Calif.
Standard Oil Co, Indiana, 910 S Michigan Ave, Chicago 90, Ill.
Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
Swan-Finch Oil Corp, 205 E 42nd St, New York 20, N. Y.
Texas Company, The, 135 E 42nd St, New York 17, N. Y.
Tide Water Associated Oil Co, 17 Battery Place, New York 4, N. Y.
Union Oil Co of Calif, 617 W 7th St, Los Angeles 17, Calif.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Waverly Petroleum Products Co, 1724 Chestnut St, Phila 3, Pa.
X Laboratories Inc, 25 West 45th St, New York 19, N. Y.
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.

OILS, SWITCH AND TRANSFORMER

Chard & Howe, 170 Broadway, New York 38, N. Y.
Cities Service Oil Co, 70 Pine St, New York 5, N. Y.
Cook's Adam Sons Inc, 5 N Stiles St, Linden, N. J.
Esso Standard Oil Co, 15 W 51st St, New York 19, N. Y.
Freedom-Valvoline Oil Co, Freedom, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Kano Laboratories, 1000 S Thompson Lane, Nashville 11, Tenn.
Line Material Co, 700 W Michigan Ave, Milwaukee 1, Wis.
Pure Oil Co, 35 E Wacker Drive, Chicago 1, Ill.
Sanson & Sons, Inc, H E, 145 Quaker Ridge Rd, Manhasset, L. I., N. Y.
Shell Oil Co Inc, 50 W 50th St, New York 20, N. Y.
Socony-Vacuum Oil Co, 26 Broadway, New York 4, N. Y.
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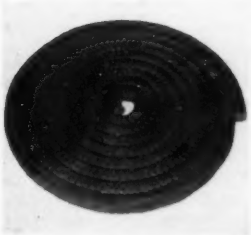

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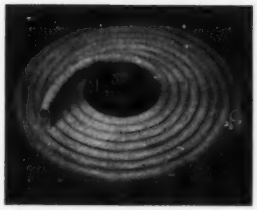

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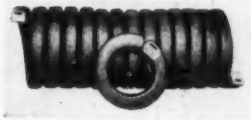

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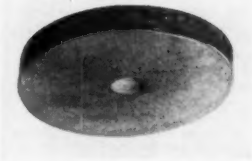

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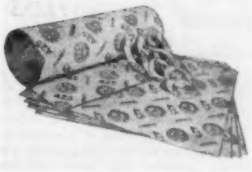

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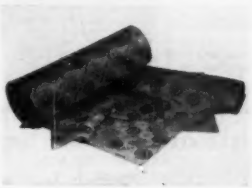

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Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Goodall Rubber Co, 411 Whitehead Rd, Trenton 4, N. J.
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Hollow Center Packing Co, 6523 Euclid Ave, Cleveland 3, Ohio
Johns-Manville, 22 East 40th St, New York 16, N. Y.
Linear Inc, State Rd & Levick St, Tacony, Philadelphia 35, Pa.
Mario Co, Inc, 434 Broadway, New York 13, N. Y.
Metalastic Mfg Corp, 536 Broad St, Glen Rock, N. J.
New Jersey Asbestos Co, 1 Water St, New York, N. Y.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Pilot Packing Co, Inc, P O Box 748, Sea Cliff, N. Y.
Q-P Packing Div, Tillotson Rubber Co, Neeham Heights 94, Mass.
Rains Wood-Metal Packings, 904 Broadway, Spokane 5, Wash.
Raybestos-Manhattan Inc, Packing Div, Manheim, Pa.
Relief Packing Co, 6523 Euclid Ave, Cleveland 3, Ohio
Rodpak, Inc, 1315 Natoma St, San Francisco, Calif.
Sea-Ro Packing Co, 133 Wood-Ridge St, Wood-Ridge, N. J.
Sims Pump Valve Co, Inc, 145 Hudson St, New York 13, N. Y.
Sterling Packing & Gasket Co, 1701 Nance St, Houston 10, Texas
Strahman Valves Inc, 16 Hudson St, New York 13, N. Y.
Union Asbestos & Rubber Co, Dept 1819 332 S Michigan Ave, Chicago 4, Ill.
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.
Walker, James, Packing Co Inc 96 Liberty St, New York 6, N. Y.

PACKING, SHEET

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Armstrong Cork Co, Liberty St, Lancaster, Pa.
Belmont Packing & Rubber Co, Butler & Sepviva Sts, Phila 37, Pa.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Chesterton, A W Co, 6 Ashland St, Everett 49, Mass.
Collins Packing Co, Inc, 401 N Broad St, Philadelphia 8, Pa.
Crane Packing Co, 1830 Cuyler Ave, Chicago 13, Ill.
Darcold Co, Inc, 145 Sixth Ave, New York 13, N. Y.
Durabla Mfg Co, 114 Liberty St, New York 6, N. Y.
Ehret Magnesia Mfg Co, Valley Forge, Pa.
Eureka Packing Co, 294 - 296 46th St, Brooklyn 20, N. Y.
Felt Products Mfg Co, 1511 Carroll Ave, Chicago 7, Ill.
Flexrock Co, 3677 Filbert St, Phila 4, Pa.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Gilmer, L H Co, Div U S Rubber Co, Tacony, Philadelphia 35, Pa.
Goodall Rubber Co, 411 Whitehead Rd, Trenton 4, N. J.
Goodrich, B F, Co, Akron, Ohio
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Hewitt-Robins Inc, 370 Lexington Ave, New York 17, N. Y.
Hollow Center Packing Co, 6523 Euclid Ave, Cleveland 3, Ohio
Johns-Manville, 22 East 40th St, New York 16, N. Y.
Keasbey & Mattison Co, Butler Ave, Ambler, Pa.
Linear Inc, State Rd & Levick St, Tacony, Phila 35, Pa.
Mario Co, Inc, 434 Broadway, New York 13, N. Y.
New Jersey Asbestos Co, 1 Water St, New York, N. Y.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Pilot Packing Co, Inc, P O Box 748, Sea Cliff, N. Y.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Phila 24, Pa.
Raybestos-Manhattan, Inc, Packing Div, Manheim, Pa.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Sea-Ro Packing Co, 133 Wood-Ridge St, Wood-Ridge, N. J.
Sexauer, J A, Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Sims Pump Valve Co, Inc, 145 Hudson St, New York 13, N. Y.
Sterling Packing & Gasket Co, 1701 Nance St, Houston 10, Texas
Strahman Valves Inc, 16 Hudson St, New York 13, N. Y.
Thermoid Co, Trenton, N. J.
Union Asbestos & Rubber Co, Dept 1819 332 S Michigan Ave, Chicago 4, Ill.
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.
Walker, James, Packing Co Inc, 96 Liberty St, New York 6, N. Y.

PAINT, ALUMINUM

Aluminum Industries Inc, 2438 Beekman St, Cincinnati 25, Ohio
Amercoat Corp, 4809 Firestone Blvd, Southgate, Calif.
American-Marietta Co, 101 E Ontario St, Chicago 11, Ill.
Arco Co, 7301 Bessemer Ave, Cleveland 27, Ohio
Armstrong Cork Co, Liberty St, Lancaster, Pa.
Carey, Philip, Mfg Co, Wayne at Cooper, Cincinnati 15, Ohio
Dampney Co, 1243 River St, Hyde Park, Boston, Mass.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dixon, Joseph, Crucible Co, 167 Wayne St, Jersey City 3, N. J.
Dominion Chemical Co Inc, 11 W 42nd St, New York 18, N. Y.
du Pont de Nemours, E I & Co, Inc, Wilmington 98, Del.
Eagle-Picher Co, American Bldg, Cincinnati 1, Ohio
Esso Standard Oil Co, 15 W 51st St New York 19, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, New York
Horn, A C Inc, Tenth St & 44th Ave Long Island City 1, N. Y.
Inertol Co Inc, 480 Frelinghuysen Ave Newark 5, N. J.
Magic Chemical Co, 121 Crescent St Brocton 2, Mass.
Monroe Co, Inc, 10703 Quebec Ave, Cleveland 6, Ohio
Pabco Products, Inc 475 Brannan St San Francisco 19 Calif.
Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J
Sonneborn, L Sons Inc 300 Fourth Ave New York 10, N. Y
Speco Co, 7308 Associate Ave, Cleveland 9, Ohio
Stonhard Co, 1306 Spring Garden St Philadelphia 23, Pa
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio
United Chromium Inc, 100 E 42nd St New York 17, N. Y.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.

PAINT, BITUMINOUS-BASE

American Bitumuls & Asphalt Co, 200 Bush St, San Francisco 4, Calif.
American-Marietta Co, 101 E Ontario St, Chicago 11, Ill.
Barrett Div, Allied Chemical & Dye Corp, 40 Rector St, N. Y. 6, N. Y.
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Horn, A C Co Inc, Tenth St, & 44th Ave, Long Island City 1, N. Y.
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Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Skybryte Co, 3125 Perkins Ave, Cleveland 14, Ohio
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Speco Co, 7308 Associate Ave, Cleveland 9, Ohio
Stonehard Co, 1306 Spring Garden St, Philadelphia 23, Pa.
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.

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Aluminum Industries, Inc, 2438 Beekman St, Cincinnati 25, Ohio
Amercoat Corp, 4309 Firestone Blvd, Southgate, Calif.
American-Marietta Co, 101 E Ontario St, Chicago 11, Ill.
Arco Co, 7301 Bessemer Ave, Cleveland 27, Ohio
Barrett Div, Allied Chemical & Dye Corp, 40 Rector St, N. Y. 6, N. Y.
Dampney Co, 1243 River St, Hyde Park, Boston 36, Mass.
Dixon, Joseph Crucible Co, 167 Wayne St, Jersey City 3, N. J.
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Eagle-Picher Co, American Bldg, Cincinnati 1, Ohio
Esso Standard Oil Co 15 W 51st St, New York 19, N. Y.
Horn, A C Co Inc, Tenth St & 44th Ave, Long Island City 1, N. Y.
Inertol Co Inc, 480 Frelinghuysen Ave, Newark 5, N. J.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
Magic Chemical Co, 121 Crescent St, Brockton 2, Mass.
Markal Co, 3052 W Carroll Ave, Chicago 12, Ill.
Monroe Co, Inc, 10703 Quebec Ave, Cleveland 6, Ohio
Pabco Products, Inc, 475 Brannan St, San Francisco 19, Calif.
Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
Ruberoid Co, 500 Fifth Ave, New York 18, N. Y.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Skybryte Co, 3125 Perkins Ave, Cleveland 14, Ohio
Sonneborn, L Sons Inc, 300 Fourth Ave, New York 10, N. Y.
Speco Co, 7308 Associate Ave, Cleveland 9, Ohio
Stonhard Co, 1306 Spring Garden St, Philadelphia 23, Pa.
Tremco Mfg Co, 8701 Kinsman Rd, Cleveland, Ohio
United Chromium Inc, 100 E 42nd St, New York 17, N. Y.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.

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Brady, W H, Co, 16 E Spring St, Chippewa Falls, Wis.
DeVilbiss Co, 300 Phillips Ave, Toledo 1, Ohio
Gray Co Inc 60 11th Ave, SE, Minneapolis 13, Minn.
Republic Rubber Div, Lee Rubber & Tire Corp, Albert St, Youngstown 1, Ohio
Schramm Inc, West Chester, Pa.
Skybryte Co, 3125 Perkins Ave, Cleveland 14, Ohio
Spray Engrg Co, 114 Central St, Somerville 45, Mass.

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Lalley Motor Co, 1050 Ivanhoe Road, Cleveland 10, Ohio
Cleveland Fuel Equipment Co, 7316 Associate Ave, Cleveland 9, Ohio
Falstrom Co, 22 Falstrom Court, Passaic, N. J.
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Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Hays Corp, Michigan City 23, Ind.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Ready Power Co, 11231 Freud Ave, Detroit, Mich.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

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American Brass Co, 414 Meadow St, Waterbury 20, Conn.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Bridgeport Brass Co, 30 Grand St, Bridgeport 2, Conn.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Reading Tube Corp, 36-12 47th Ave, Long Island City 1, N. Y.
Revere Copper and Brass Inc, 230 Park Ave, New York 17, N. Y.

PIPE, CAST-IRON

American Car & Foundry Co, 30 Church St, New York 7, N. Y.
Brady Conveyors Corp, 20 W Jackson Blvd, Chicago 4, Ill.
Clow, James B. & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
Combustion Engrg-Superheater Inc, 200 Madison Ave, New York 16, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Hydro-Ash Corp, 1408 W Harrison St, Chicago 7, Ill.
Jenkins Conveyors Co, 614 Central Ave East Orange, N. J.
Wickwire Spencer Steel Div, Colorado Fuel & Iron Corp, 575 Madison Ave, New York 22, N. Y.

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Goodyear Tire & Rubber Co, Inc, 1144 E Market St, Akron 16, Ohio
Raybestos-Manhattan Inc, 61 Willett St Passaic N. J
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.

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American Locomotive Co, Schenectady 5 N. Y
Armco Drainage & Metal Products, Inc, 703 Curtis St, Middletown, Ohio
Carpenter Steel Co, P O Box 116, Roselle, N. J.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth N. J.
Naylor Pipe Co, 1230 E 92nd St, Chicago 19, Ill.
Taylor Forge & Pipe Works, P O Box 485, Chicago 90, Ill.
Wickwire Spencer Steel Div, Colorado Fuel & Iron Corp, 575 Madison Ave, New York 22, N. Y.

PIPE, STEEL

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Alert Boiler & Mfg Co, 315 W Woodbridge St, Detroit 26, Mich.
American Locomotive Co, Schenectady 5, N. Y.
Armco Drainage & Metal Products, Inc, 703 Curtis St, Middletown, Ohio
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Babcock & Wilcox Tube Co, Beaver Falls, Pa.
Chicago Bridge & Iron Co, 2454 McCormick Bldg, Chicago 4, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Jones & Laughlin Steel Corp, 3rd Ave & Ross St, Pittsburgh 30, Pa.
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Lukens Steel Co, Coatesville, Pa.
Lummus Co, 2 Park Ave, New York, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Murray, A B Co, Inc, 603 Green Lane, Elizabeth, N. J.
National Supply Co, Grant Bldg, Pittsburgh 30, Pa.
National Tube Co, U S Steel Sub, Frick Bldg, Pittsburgh 19, Pa.
Nazareth Steel Fabricators, Inc, Nazareth, Pa.
Pipe & Tubular Prods Inc, 8504 Germantown Ave, Philadelphia, Pa.
Pittsburgh Steel Co, Dept PG, Grant Bldg, Pittsburgh 30, Pa.
Ryerson, Joseph T, & Son, Inc, 16th & Rockwell Sts, Chicago, Ill.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Steel & Tubes Div, Republic Steel Corp, 212 E 131st St, Cleveland 8, Ohio
Taylor Forge & Pipe Works, P O Box 485, Chicago 90, Ill.
Tri-Clover Machine Co, 2809 60 St, Kenosha, Wis.
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Associated Piping & Engrg Co, P O Box 590, Compton, Calif.
Atlantic Pipe Bending & Fabricating Co, River Road, Edgewater, N. J.
Beaird J B Co Inc, 6200 St. Vincent Ave, Shreveport, La.
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Central Automatic Sprinkler Co, 4th & Cannon Ave, Lansdale, Pa.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Flori Pipe Co, 601 E Red Bud Ave, St Louis, Mo.
Frick Co, W Main St, Waynesboro, Pa.
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Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
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Naylor Pipe Co, 1230 E 92nd St, Chicago 19, Ill.
Nazareth Steel Fabricators Inc, Nazareth, Pa.
Pittsburgh Piping & Equip Co, 10 43rd St, Pittsburgh 1, Pa.
Ric-Wil Co, 1052 Union Commerce Bldg, Cleveland, Ohio
Shaw, Benjamin F Co, 2nd & Lombard St, Wilmington 99, Del.
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Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
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Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Inland Steel Co, 38 S Dearborn St, Chicago 3, Ill.
Jarecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Jones & Laughlin Steel Corp, 3rd Ave & Ross St, Pittsburgh 30, Pa.
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Nazareth Steel Fabricators Inc, Nazareth, Pa.
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Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Powell, Wm Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
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Sherman, H B, Mfg Co, 22 Barney, Battle Creek, Mich.

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Robinson, John R, 350 W 31st St, New York 1, N. Y.
Sexauer, J A, Mfg Co, 2503 3rd Ave, New York 51, N. Y.

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Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

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Keeler, E, Co, 238 West St, Williamsport 3, Pa.
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Lientz, B P, Mfg Co, 210 W 8th St, Kansas City, Mo.
Lummus Co, 2 Park Ave, New York, N. Y.
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Surface Combustion Corp, 2375 Dorr St, Toledo 1, Ohio
Thermix Corp, Greenwich, Conn.
Union Iron Works, 1420 Cascade St, Erie, Pa.
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H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Precision Thermom & Instr Co, 1401 Brandywine St, Phila, Pa.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.

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Duro Metal Products Co, 2649 N Kildare Ave, Chicago, Ill.
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Rogers Hydraulic, Inc, 453 Wallier St, Minneapolis 16, Minn.
Snap-On-Tools Corp, Kenosha, Wis.

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Dings Magnetic Separator Co, 4740 W Electric Ave, Milwaukee 14, Wis.
Eriez Mfg Co, 420 Commerce Bldg, Erie, Pa.
Stearns Magnetic Inc, 657 S 28th St, Milwaukee, Wis.

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Bond, Charles Co, 617-623 Arch St, Philadelphia 6, Pa.
Boston Gear Wks, 14 Hayward St, Quincy 71, Mass.
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Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
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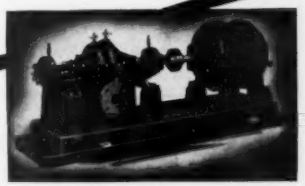
"Buffalo" PUMPS for BOILER FEED



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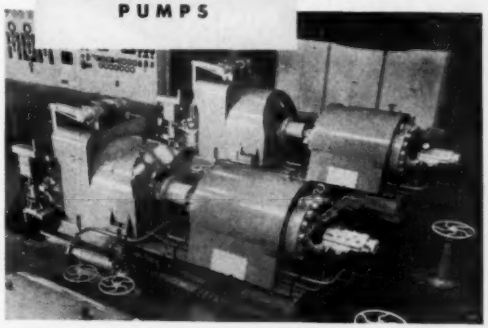

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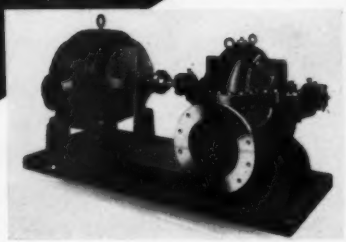

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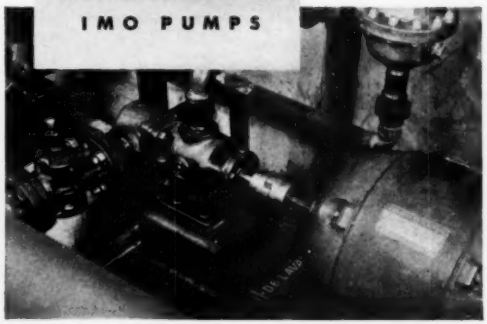

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4350	"Motor-Mount" Centrifugal Pumps. Vertical and Horizontal types. NEMA type "C" mounting flange.	Up to 200 G. P. M. Heads up to 165 ft. 25 sizes of pumps.
5004-A	Single stage, split case Centrifugal Pumps.	25 to 4000 G. P. M. Heads up to 300 ft. Full range of sizes.
4700	Vertical Multi-stage Centrifugal Pumps for wells 4" to 16" or larger.	15 to over 3000 G. P. M.
4600-A	Sump Pumps and Cellar Drainers. Various types including units with NEMA type "C" mounting flange.	Up to 3000 G. P. M. Full range of sizes.
4400	Condensation Return Units and Boiler Feed Pumps.	Wide range of sizes and capacities.
CATALOG "F"	A complete line of pumps and water systems for shallow and deep wells.	240 to 3600 gallons per hour and larger.

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Davidson, M T Co, 154 Nassau St, New York 7, N. Y.
Dean Bros Pumps Inc, 323 W 10th St, Indianapolis 7, Ind.
Deming Co, Salem, Ohio
Drew, E F & Co Inc, 15 E 26th St, New York 10, N. Y.
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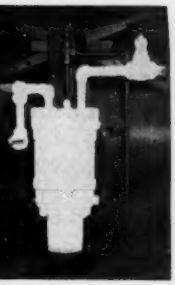

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2. Save Refrigerant
3. Save Work
4. Increase Capacity

CHECK your system for excess head pressure . . . Each 4 lbs. excess raises the load on your compressor, reduces its capacity by 1% and increases power costs 2%! Air and other non-condensables collecting in the condenser and receiver are nearly always the cause. An Armstrong Purger rids the system of air and keeps it that way...reduces loss of refrigerant...saves labor and time. The Purger pays for itself in short order.

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AIR · STEAM · VAPOR · GAS
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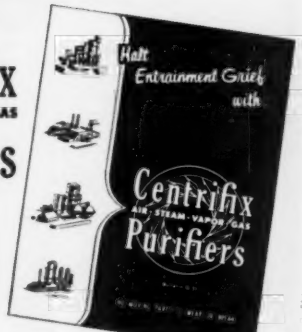

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RECORDERS
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Oxygen Recorder

This instrument has a minimum full chart range of 5 per cent Oxygen and a maximum range of 25 per cent. It is sensitive to changes of less than .05 per cent oxygen and has a sustained accuracy within one-quarter of one per cent of actual oxygen content.

It may operate air controls or high and low alarm contacts.

For complete information write for Bulletin 151-A.

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With the Bailey Pyrotron you can control temperatures in these three ways:

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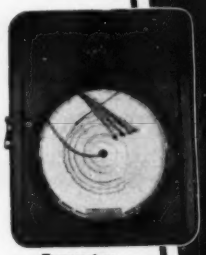

Temperature Recorder

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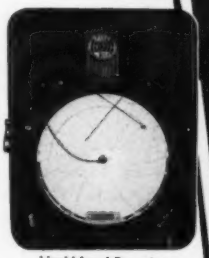
BAILEY LEVEL RECORDER

The Bailey Level Recorder accurately indicates, records and controls level of liquids under pressure or in open vessels. It is available with float-type, bell-type or bellows-type level measuring devices to best suit your requirements.



Liquid Level Recorder

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BAILEY METERS

THREE-ELEMENT CONTROL

This air-operated system safely handles the exacting requirements of boilers with high steaming rates and relatively small water storage. It accurately maintains the rate of feed water input equal to the rate of steam output and can be adjusted to hold constant level or level which varies with rating. *Write for Bulletin 105-B.*

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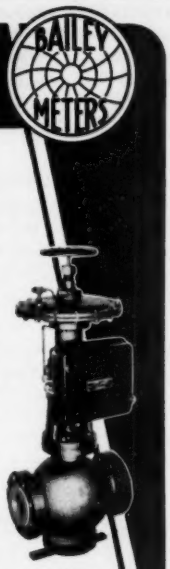
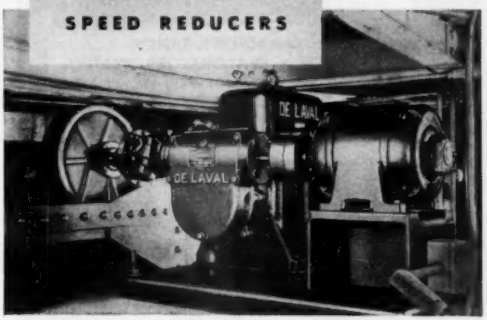
This self-contained regulator is suited to smaller boilers operating at relatively low rates of steam liberation. It features low installation costs, removable valve parts, and independence of valve location. *Write for Bulletin 83-D.*



Bailey Feed Water Control Valve

BAILEY METER COMPANY
1016 IVANHOE ROAD CLEVELAND 10, OHIO

DE LAVAL
WORM GEAR
SPEED REDUCERS



These heavy-duty worm gear speed reducers seldom require attention under the most rugged operating conditions. They make a quiet, close-couple compact drive. They permit high ratio reductions in a minimum of space and withstand severe shock loads without damage. De Laval builds all sizes from 3" to 30" center distances for transmission ratios of 3.1:1 to 100:1 in single reduction units and ratios of 50:1 to 8000:1 in double reduction units. Send for De Laval Manuals G-WBV and G-WWH containing data on single and double reduction units.

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Ruggles-Klingemann Mfg Co, Foster Court, Salem, Mass.
Schade Valve Mfg Co, 2527 N Bodine St, Phila 33, Pa.
Spence Engrg Co Inc, Walden, N. Y.
Square D Co, 4041 Richards St, Milwaukee 12, Wis.
Squires C E, Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Staples & Pfeiffer, 528 Bryant St, San Francisco 7, Calif.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland, Ohio
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
Uehling Instrument Co, 473 Getty Ave, Paterson 3, N. J.
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.
Waters Governor Co, 53 Waters Ave, Everett 49, Mass.

REGULATORS, SPEED, ELECTRIC MOTOR

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
General Regulator Corp, 165 Broadway, New York 6, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Ohmite Mfg Co, 4835 W Flournoy St, Chicago 44, Ill.
Raytheon Mfg Co, Waltham 54, Mass.
Reliance Electric & Engrg Co, 1058 Ivanhoe Road, Cleveland 10, Ohio
Speed Control Corp, 1450 Depot St, Wickliffe, Ohio
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Ward Leonard Electric Co, 100 South St, Mount Vernon, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

REGULATORS, TEMPERATURE

Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Barber-Colman Co, Rockford, Ill.
Bristol Co, Waterbury 20, Conn.
Burling Instrument Co, 5 Vose Ave, South Orange, N. J.
Conoflow Corp, 2100 Arch St, Philadelphia 3, Pa.
d'Este Div, Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis, Mo.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Farris-Stacon Corp, 400 Commercial Ave, Palisades Park, N. J.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Fulton Sylphon Div Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.

General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
General Regulator Corp, 165 Broadway, New York 6, N. Y.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
Lawler Automatic Controls Co, 453 N MacQuestion Pkwy, Mt Vernon, N. Y.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Controls, Inc, Goshen, Ind.
Penn Industrial Instrument Corp, 4110 Haverford Ave, Phila 4, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Pyrometer Instrument Co, Bergenfield, N. J.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Ruggles-Klingemann Mfg Co, Foster Court, Salem, Mass.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Spence Engrg Co Inc, Walden, N. Y.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Squires, C E, Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Sterling Inc, 3738 N Holton St, Milwaukee 12, Wis.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Ulanet, Geo Co, 415 Market St, Newark 5, N. J.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

REGULATORS, VACUUM

Askania Regulator Co, 240 E Ontario St, Chicago 11, Ill.
Associated Valve & Engrg Co, 1150 W Marquette Rd, Chicago 21, Ill.
Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Brooke Engrg Co Inc, 4517 Wayne Ave, Philadelphia 20, Pa.
Cash, A W, Co, Box 551, Decatur, Ill.
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla.
Conoflow Corp, 2100 Arch St, Philadelphia 3, Pa.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis, Mo.
Fisher Governor Co, Marshalltown, Iowa
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Fulton Sylphon Div Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
General Regulator Corp, 165 Broadway, New York 6, N. Y.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Hastings Instrument Co, Super Highway & Pine Ave, Hampton 10, Va.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
Mason-Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Controls, Inc, Goshen, Ind.
Penn Industrial Instrument Corp, 4110 Haverford Ave, Phila 4, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Ruggles-Klingemann Mfg Co, Foster St, Salem, Mass.
Schade Valve Mfg Co, 2527 N Bodine St, Philadelphia 33, Pa.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
Waters Governor Co, 53 Waters Ave, Everett 49, Mass.

REGULATORS, VOLTAGE

Acme Electrical Corp, Cuba, N. Y.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Burlington Instrument Co, 203 N 3rd St, Burlington, Iowa
Control Corp, 718 Central Ave, Minneapolis 14, Minn.
Eclipse-Pioneer Div, Bendix Aviation Corp, Teterboro, N. J.
Federal Telephone & Radio Corp, 100 Kingsland Rd, Clifton, N. J.
Electric Machy Mfg Co, 1331 NE Tyler St, Minneapolis 13, Minn.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Inc, 420 Lexington Ave, New York 17, N. Y.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Raytheon Mfg Co, Waltham 54, Mass.
Superior Electric Co, 83 Laurel St, Bristol 2, Conn.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

RELAYS, ELECTRIC

Allen-Bradley Co, 1326 S 2nd St, Milwaukee 4, Wis.
American Relay & Controls Inc, 4901 Flournoy St, Chicago 44, Ill.
Arrow-Hart & Hegeman Electric Co, 103 Hawthorn St, Hartford, Conn.
Autocall Co, 1047 Warden Ave, Shelby, Ohio
Automatic Switch Co, 391 Lakeside Ave, Orange, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Barber-Colman Co, Rockford, Ill.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Control Corp, 718 Central Ave, Minneapolis 14, Minn.
Cook Electric Co, 2700 Southport Ave, Chicago 14, Ill.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Eclipse-Pioneer Div, Bendix Aviation Corp, Teterboro, N. J.
Federal Telephone & Radio Corp, 100 Kingsland Rd, Clifton, N. J.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
I-T-E Circuit Breaker Co, 19th & Hamilton Sts, Philadelphia 30, Pa.
McQuay-Norris Mfg Co, 2320 Marconi St, St Louis 10, Mo.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Monitor Controller Co, 51 Hayward St, Baintree 84, Mass.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Servo-Tek Products Co, Inc, 4 Godwin Ave, Paterson 1, N. J.
Signal Engrg Mfg Co, 154 W 14th St, New York 11, N. Y.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Ward Leonard Electric Co, 100 South St, Mount Vernon, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

RELAYS, ELECTRONIC

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Cook Electric Co, 2700 Southport Ave, Chicago 14, Ill.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Lumenite Electronic Co, 407 S Dearborn St, Chicago 5, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Photoswitch Inc, 77 Broadway, Cambridge 42, Mass.
Precision Thermometer & Instr Co, 1401 Brandywine St, Phila 30, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Ripley Co, Factory St, Middletown, Conn.
Signal Engrg Mfg Co, 154 W 14th St, New York 11, N. Y.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Thermo Instrument Co, P O Box 336, Belmont, Calif.
Wallace & Tiernan, 11 Mill St, Belleville 9, N. J.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

RESISTORS, ELECTRIC, UNIT

Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Cutler-Hammer, Inc, 294 N 12th St, Milwaukee 1, Wis.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
International Resistance Co, 401 N Broad St, Philadelphia 8, Pa.
I-T-E Circuit Breaker Co, 19th & Hamilton Sts, Philadelphia 30, Pa.
Mallory, P R & Co, 3029 E Washington St, Indianapolis, Ind.
Ohio Carbon Co, 12508 Berea Rd, Cleveland 11, Ohio
Ohmite Mfg Co, 4835 W Flournoy St, Chicago 44, Ill.
Sprague Electric Co, 189 Beaver St, North Adams, Mass.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wiegand, Edwin L Co, 7506 Thomas Blvd, Pittsburgh 8, Pa.

RESURFACING COMPOUNDS

(See Compounds, Resurfacing)

RHEOSTATS

Allen-Bradley Co, 1326 S 2nd St, Milwaukee 4, Wis.
Biddle, James G, Co, 1316 Arch St, Philadelphia 7, Pa.
Clark Controller Co, 1146 E 152nd St, Cleveland 10, Ohio
Columbia Electric Mfg Co, 4519 Hamilton Ave, Cleveland 14, Ohio
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Hanson-Van Winkle-Munning Co, Church St, Matawan, N. J.
Mallory, P R & Co Inc, 3029 E Washington St, Indianapolis 6, Ind.
National Carbon Co, 30 E 42nd St, New York 17, N. Y.
Ohmite Mfg Co, 4835 W Flournoy St, Chicago 44, Ill.
Sticht Herman H, Co, 27 Park Pl, New York 7, N. Y.
Ward Leonard Electric Co, 100 South St, Mount Vernon, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

RINGS, PISTON

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Cook, C Lee Mfg Co, 916 S 8th St, Louisville 3, Ky.
Cookite Ring Sales Co, 1737 Howard Ave, Chicago 26, Ill.
Double Seal Ring Co, 2065 Montgomery St, Fort Worth 1, Texas
France Packing Co, 6512 State Rd, Phila 35, Pa.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Holmes, Robert, & Bros, Danville, Ill.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
Johnson Mfg Co, Fox & Holly Sts, Seattle 8, Wash.
Koppers Co Inc, Koppers Bldg, Pittsburgh 19, Pa.
Koppers Co, Inc, 200 Scott St, Baltimore, Md.
McQuay-Norris Mfg Co, 2320 Marconi St, St Louis 10, Mo.
Marlo Co, Inc, 434 Broadway, New York 13, N. Y.
National Carbon Co, 30 E 42nd St, New York 17, N. Y.
Perfect Circle Corp, 552 S Washington St, Hagerstown, Md.
Sealed Power Corp, Original Equip Ring Div, Muskegon, Mich.
Wilkening Mfg Co, 2009 S 71st St, Philadelphia 42, Pa.

RODS, WELDING

Air Reduction Co, 60 E 42nd St, New York 17, N. Y.
American Manganese Steel Div, Chicago Heights, Ill.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Bethlehem Steel Co, Bethlehem, Pa.
Bridgeport Brass Co, 30 Grand St, Bridgeport 2, Conn.
Coast Metals, Inc, Little Ferry, N. J.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Eutectic Welding Alloys Corp, 40-40 172nd St, Flushing, N. Y.
Harnischfeger Corp, 4400 W National Ave, Milwaukee 14, Wis.
Haynes Stellite Co, 725 S Lindsay St, Kokomo, Ind.
Hobart Bros. Co, Hobart Square, Troy 1, Ohio
International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.
Lincoln Electric Co, 22801 St. Clair Ave, Cleveland 17, Ohio
Linde Air Products Co, 30 E 42nd St, New York 17, N. Y.
Marquette Mfg Co, 307 E Hennepin Ave, Minneapolis 14, Minn.
Pittsburgh Steel Co, Dept PG, Grant Bldg, Pittsburgh 30, Pa.
Revere Copper and Brass Inc, 230 Park Ave, New York 17, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

ROPE, WIRE

American Cable Div, American Chain & Cable Co Inc, Wilkes-Barre, Pa.
American Steel & Wire Div, Rockefeller Bldg, Cleveland 13, Ohio
Bethlehem Steel Co, Bethlehem, Pa.
Broderick & Bascom Rope Co, 4203 N Union Blvd, St Louis, Mo.
Colorado Fuel & Iron Corp, Continental Oil Bldg, Denver 1, Colo.
Jones & Laughlin Steel Corp, 3rd Ave & Ross St, Pittsburgh 30, Pa.
Le Tourneau, R G Inc, Peoria, Ill.
Macwhyte Co, 2944 14th Ave, Kenosha, Wis.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Roebling's, John A Sons Co, Trenton 2, N. J.
Wickwire Spencer Steel Div, Colorado Fuel & Iron Corp, 575 Madison Ave, New York 22, N. Y.
Wire Rope Slings Div, American Chain & Cable Co, Wilkes-Barre, Pa.

SAMPLERS, COAL

American Pulverizer Co, 1349 Macklind Ave, St Louis 10, Mo.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Gruendler Crusher & Pulverizer Co, 2915 N Market St, St Louis, Mo.
Hardinge Co Inc, 240 Arch St, York, Pa.
Heyl & Patterson Inc, 55 Water St, Pittsburgh 22, Pa.
Sturtevant Mill Co, 71 Harrison Sq, Boston 22, Mass.

SAMPLERS, WATER

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Hardinge Co Inc, 240 Arch St, York, Pa.
Infico Inc, P O Box 5033, Tucson, Ariz.
Madden, P E & Co, 352 W Walton St, Chicago 10, Ill.

SANDBLAST EQUIPMENT

American Wheelabrator & Equip Corp, 744 S Byrkit St, Mishawaka, Ind.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Pangborn Corp, 90 Pangborn Blvd, Hagerstown, Md.
Sly Mfg Co, W W, 4600 Train Ave, Cleveland, Ohio

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SCAFFOLDING

Beaver Art Metal Corp, Beaver Ave, Elmwood City, Pa.
Duo-Safety Ladder Co, Oshkosh, Wis.
Patent Scaffolding Co, Inc, 12th St, Long Island City 1, N. Y.
Safway Steel Products Inc, 6200 W State St, Milwaukee 13, Wis.
Universal Mfg Corp, Zelienople, Pa.
Up-Right Scaffolds, 1013 Pardee St, Berkeley, Calif.

SCALES, WEIGH

Beaumont Birch Co, 1505 Race St, Phila 2, Pa.
Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.
Fairbanks, Morse & Co, Fairbanks-Morse Bldg, Chicago 5, Ill.
Richardson Scale Co, Clifton, N. J.
Stock Equip Co. 745 P Hanna Bldg, Cleveland 15, Ohio
Yale & Towne Mfg Co, Roosevelt Blvd, Phila 15, Pa.

SCRAPERS, DRAG

Beaumont Birch Co, 1505 Race St, Philadelphia 2, Pa.
Fairfield Engrg Co, 307 Barnhart St, Marion, Ohio
National Conveyors Co, Inc, 50 Church St, New York 7, N. Y.
Sauerman Bros, Inc, 522 S Clinton St, Chicago 7, Ill.
Wilmot Engineering Co, Hazleton, Pa.

SCRAPERS, TRACTOR-DRAWN

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Caterpillar Tractor Co, 600 W Washington St, Peoria 8, Ill.
Euclid Road Machinery Co, 1361 Chardon Rd, Cleveland, Ohio

SCREENS, BARS

Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Bergen Point Iron Wks, Foot of W 5th St, Bayonne, New Jersey
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Farquhar, A B Co, York, Pa.
Infilco Inc, P O Box 5033, Tucson, Ariz.
Holmes, Robert, & Bros, Danville, Ill.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas.
Nordberg Mfg Co, 3073 S Chase Ave, Milwaukee 7, Wis.

SCREENS, TRAVELING

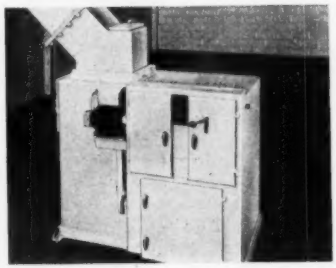
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Hendrick Mfg Co, P O Box 497, Carbondale, Pa.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

SCREENS, VIBRATING

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Colorado Fuel & Iron Corp, Continental Oil Bldg, Denver 1, Colo.
Deister Concentrator Co, 901 Glasgow Ave, Fort Wayne, Ind.
Farquhar, A B Co, York, Pa.
Gruendler Crusher & Pulverizer Co, 2915 N Market St, St. Louis, Mo.
Hendrick Mfg Co, P O Box 497, Carbondale, Pa.
Holmes, Robert, & Bros, Danville, Ill.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Littleford Bros, Inc, 453 E Pearl St, Cincinnati, Ohio
Nordberg Mfg Co, 3073 S Chase Ave, Milwaukee 7, Wis.
Robins Conveyors Div, Hewitt-Robins Inc, 270 Passaic Ave, Passaic, N. J.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

SCALES, WEIGH

S-E-Co. Dust-tight Automatic Coal Scale



FEATURES

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Sturtevant Mill Co, 71 Harrison Sq, Boston 22, Mass.
Syntron Co, 492 Lexington, Homer City, Pa.
Warren Brothers Roads Co, 38 Memorial Dr, Cambridge 42, Mass.
Wickwire Spencer Steel Div, Colorado Fuel & Iron Corp, 575 Madison Ave, New York 22, N. Y.
Williams Patent Crusher Co, 813 Montgomery, St. Louis, Mo.

SCRUBBERS, GAS

Aerotec Corp, Greenwich, Conn.
Air & Refrigeration Corp, 475 Fifth Ave, New York 17, N. Y.
Anderson, V D, Co, 1935 W 96th St, Cleveland 2, Ohio
Bethlehem Steel Co, Bethlehem, Pa.
Black, Sivalls & Bryson, Inc, Power & Light Bldg, Kansas City 6, Mo.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
J & J Steel & Supply, Odessa, Texas
Kinney Engineers, Inc, S P, 201 Second Ave, Carnegie, Pa.
Peabody Engrg Corp, 580 Fifth Ave, New York 19, N. Y.
Peerless Mfg Co, Dallas, Texas
Pritchard, J F & Co, 908 Grand Ave, Kansas City 6, Mo.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Steel Products Corp, 52 Vanderbilt Ave, New York 17, N. Y.
Thermix Corp, Greenwich, Conn.
Winslow Engrg Corp, 4069 Hollis St, Oakland 8, Calif.

SEALS, BEARING, OIL AND GREASE

Crane Packing Co, 1830 Cuyler Ave, Chicago 13, Ill.
Felt Products Mfg Co, 1511 Carroll Ave, Chicago 7, Ill.
Felters Co, 210 South St, Boston 11, Mass.
Gates Rubber Co, 999 S Broadway, Denver 7, Colo.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Gits Bros Mfg Co, 1846 S Kilbourne Ave, Chicago 23, Ill.
Graton & Knight Co, 356 Franklin St, Worcester 4, Mass.
International Packing Corp, Bristol, N. H.
Johns-Manville, 22 E 40th St, New York 16, N. Y
Mercon Regulator Co, 2357 N 29th St, Milwaukee 10, Wis.
U S Gasket Co, 602 N 10th St, Camden, N. J.

SEALS, SHAFT, COMPRESSOR

Chicago Metal Hose Corp, 1315 S Third Ave, Maywood, Ill.
Crane Packing Co, 1830 Cuyler Ave, Chicago 13, Ill.
Durametallic Corp, Factory St, Kalamazoo 24, Mich.
Frick Co, W Main St, Waynesboro, Pa.
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Gits Bros Mfg Co, 1846 S Kilbourne Ave, Chicago 23, Ill.
Perfect Circle Corp, 552 S Washington St, Hagerstown, Md.
Syntron Co, 492 Lexington, Homer City, Pa.
U S Gasket Co, 602 N 10th St, Camden, N. J.

SEPARATORS, COMPRESSED AIR

Adams, R P Co Inc, 237 E Park Drive, Buffalo 17, N. Y.
Aerotec Corp, Greenwich, Conn.
American District Steam Co, 70 Bryant St, North Tonawanda, N. Y.
Anderson, V D Co, 1935 W 96th St, Cleveland 2, Ohio
Bell & Gossett Co, 8200 N Austin Ave, Morton Grove, Ill.
Centrifix Corp, 3608 Payne St, Cleveland 14, Ohio
De Vilbiss Co, 300 Philips Ave, Toledo 1, Ohio
Dollinger Corp, 11 Center Park, Rochester 4, N. Y.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Knapp Foundry Co, Inc, Guilford, Conn.
Leavitt Machine Co, 10 E River St, Orange, Mass.
Nicholson, W H, & Co, 125 Oregon St, Wilkes-Barre 1, Pa.
Schramm, Inc, West Chester, Pa.
Sprout, Waldron & Co, Muncy, Pa.
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Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Syntron Co, 492 Lexington, Homer City, Pa.

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Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Dings Magnetic Separator Co, 4740 W Electric Ave, Milwaukee 14, Wis.
Electric Controller & Mfg Co, 2700 E 79th St, Cleveland 4, Ohio
Erlez Mfg Co, 420 Commerce Bldg, Erie, Pa.
Honan-Crane Corp, 415 Indianapolis Ave, Lebanon, Ind.
Sprout, Waldron & Co, Muncy, Pa.
Stearns Magnetic Inc, 657 S 28th St, Milwaukee, Wis.

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Aerotec Corp, Greenwich, Conn
Air Maze Corp, 5200 Harvard Ave, Cleveland 5, Ohio
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American District Steam Co, 70 Bryant St, North Tonawanda, N. Y.
American Flexible Coupling Co, 1801 Pittsburgh Ave, Erie, Pa.
Belco Industrial Equip Div, 52 Iowa Ave, Paterson 3, N. J.
Black, Sivalls & Bryson Inc, Power & Light Bldg, Kansas City 6, Mo.
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
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DeLaval Separator Co, Poughkeepsie, N. Y
Dollinger Corp, 11 Center Park, Rochester 4, N. Y.
Eclipse-Pioneer Div, Bendix Aviation Corp, Teterboro, N. J.
Floor Corp Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Frick Co, W Main St, Waynesboro, Pa.
Honan-Crane Corp, 415 Indianapolis Ave, Lebanon, Ind.
Hoopes Mfg Co, Box 906, Springfield, Ohio
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Keckley, O C Co, 400 W Madison St, Chicago 6, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Mover, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Refinite Corp, Box 1312, Omaha, Neb.
Stickle Steam Specialty Co, 2265 Valley Ave, Indianapolis 1, Ind.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland, Ohio
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Thermix Corp, Greenwich, Conn
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

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Anderson, V D Co, 1935 W 96th St, Cleveland 2, Ohio
Blaw-Knox Co, Farmers Bank Bldg, Pittsburgh 22, Pa.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Centrifix Corp, 3608 Payne St, Cleveland 14, Ohio
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Dollinger Co, 11 Center Park, Rochester 4, N. Y.
Drico Industrial Corp, 559 W 35th St, New York 6, N. Y.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Goodyer Industries, 224 S Michigan Ave, Chicago 4, Ill.
Heilman Boiler Works Co, 132 Linden St, Allentown, Pa.
Hoppes Mfg Co, Box 906, Springfield, Ohio
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Infilco Inc, P O Box 5033, Tucson, Ariz.
International Combustion Corp, 436 Pearl St, New York, N. Y.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Mover, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
National Valve & Mfg Co, 3102 Liberty Ave, Pittsburgh 1, Pa.
Nicholson, W H & Co, 125 Oregon St, Wilkes-Barre 1, Pa.
Sims Co, 1402 E 18th St, Erie, Pa.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Stickle Steam Specialty Co, 2265 Valley Ave, Indianapolis, 1, Ind.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

SETTINGS, BOILER

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Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Carborundum Co, Perth Amboy, N. J.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detrick, M H Co, 111 W Washington St, Chicago 2, Ill.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Quigley Co, Inc, 527 Fifth Ave, New York 17, N. Y.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
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Alemite Div, Stewart-Warner Corp, 1826 Diversey Pkwy, Chicago 14, Ill.
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Fairfield Engrg Co, 307 Barnhart St, Marion, Ohio
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
National Conveyor & Supply Co, 346 N Harding Ave, Chicago 24, Ill.
Pangborn Corp, 90 Pangborn Blvd, Hagerstown, Md.
Robins Conveyors Div, Hewitt-Robins, Inc, 270 Passaic Ave, Passaic, N. J.
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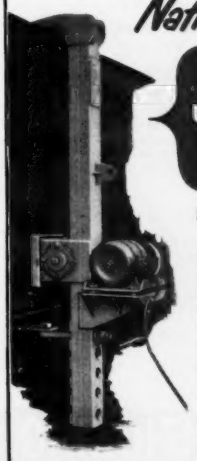

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Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
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Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
General Filter Co, Box 111, Ames, Iowa
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Hungerford & Terry, Inc, 226 Atlantic Ave, Clayton, N. J.
Illinois Water Treatment Co, 883 Cedar St, Rockford, Ill.
Infilco Inc, P O Box 5033, Tucson, Ariz.
Layne & Bowler Inc, Box 6815 Hollywood Sta, Memphis 8, Tenn.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Refinite Corp, Box 1312, Omaha, Neb.
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Bruner Corp, 2318 N 30th St, Milwaukee 45, Wis.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
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General Filter Co, Box 111, Ames, Iowa
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Heilman Boiler Works, 132 Linden St, Allentown, Pa.
Illinois Water Treatment Co, 833 Cedar St, Rockford, Ill.
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Permutit Co, 330 W 42nd St, New York 36, N. Y.
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Research Products Co, Filter Div, 1015 E Washington Ave, Madison 10, Wis.
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SPRAY TOWERS

(See Towers, Cooling)

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(See Wheels, Sprocket)

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Bethlehem Steel Co, Bethlehem, Pa.
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Brownell Co, 306 N Findlay St, Dayton 1, Ohio
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Connery Construction Co, 2nd & Luzerne Sts, Phila 40, Pa.
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Detroit LoStoker is a complete firing unit. Compact — single retort — mechanically driven— plunger feed—side-cleaning design. Many sizes and capacities for various types of boilers. Simple, accessible, dependable.

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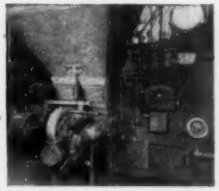
Detroit UniStoker with Adjustable Feed provides a wide range of coal feed control.



Installation of Detroit Double Retort Stoker now equipped with Detroit Adjustable Coal Feed Control.

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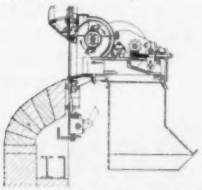
Detroit RotoStoker with Stationary Grates. Ash removal is through doors at grate level.

Detroit RotoStoker is spreader stoker with OVERTHROW ROTORS that distribute the fuel uniformly in the furnace. Fine particles burned in suspension. Coarse coal, burned on the grate with a comparatively thin but uniform fuel bed. Three types of grates shown are available. RotoStokers burn successfully an extremely wide range of fuels without any special preparation. Responsive to fluctuating loads, maintaining uniform steam pressure under automatic control of fuel and air supply to the furnace. Operate with high CO_2, low combustible loss in ash. Little power is required for operation. Maintenance costs are negligible. In combination with coal, RotoStokers also successfully burn wood and other refuse. Write for *Bulletin*

Detroit RotoStoker with Hand Dumping Grates, cleaned by releasing dumping levers at the front.

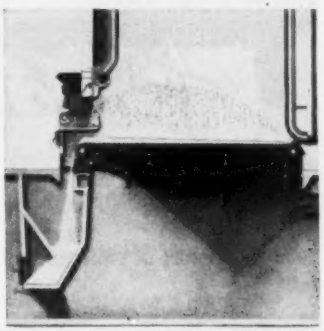
Detroit RotoStoker with Power Operated Dumping Grates, either steam or compressed air operated.



Rotor Assembly — shows the coal feed-plate, the adjustable spilling plate, and the air-cooled Rotor housing. The Rotor shaft operates in water-cooled ball bearings.

DETROIT ROTOGRATE STOKER

An advanced design of spreader stoker with FORWARD MOVING GRATES for large and medium boilers. Fine particles of fuel are burned in suspension and coarse coal, burned on the grate. Screenings or crushed run-of-mine coal are used without grinding or pulverizing. Successfully burns a wide range of fuels, such as the lower grades of Bituminous Coal and Lignites, mined in the Western States, as well as the better grades of Bituminous Coal. Fuels of high ash content are burned with higher burning rates for longer periods. Intermittent cleaning of fires or disturbance of uniform combustion is eliminated by the slow, continuous FORWARD MOVEMENT OF THE GRATES that discharges the ash at the front. Combustible content of ash is usually less than two per cent. Write for *Bulletin*



Detroit RotoGrate Stoker has a CONTINUOUSLY CLEANING FORWARD MOVING GRATE that permits higher burning rates with fuels of either high or low ash content.

Manufacturing facilities are unexcelled. All Detroit Stokers are completely assembled and inspected at our works and erected under expert supervision.

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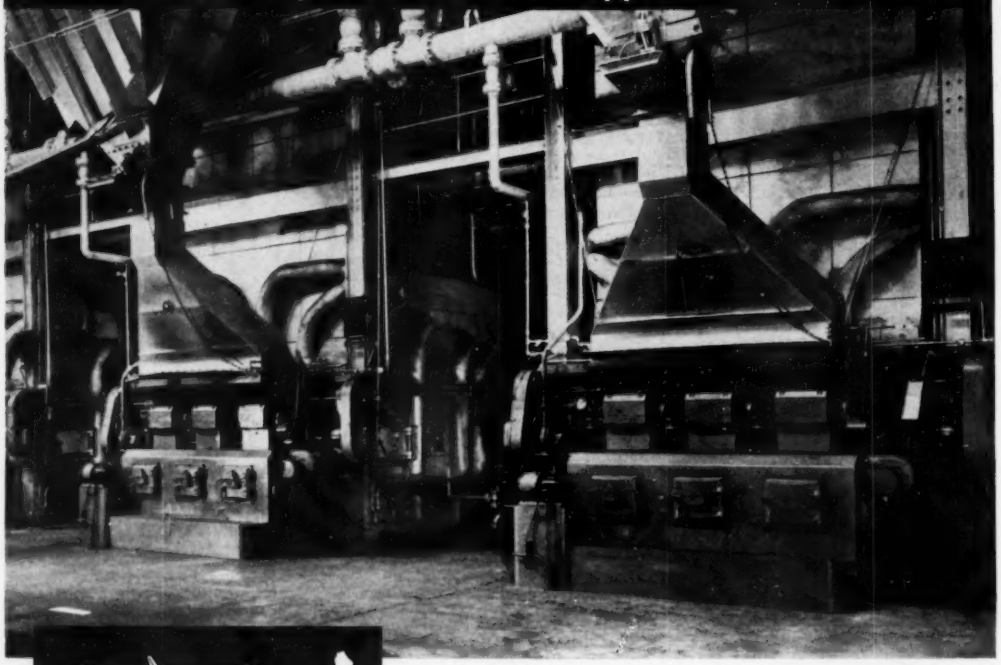
Three 60,000-pound Hoffman Type 3A-CAD Stokers



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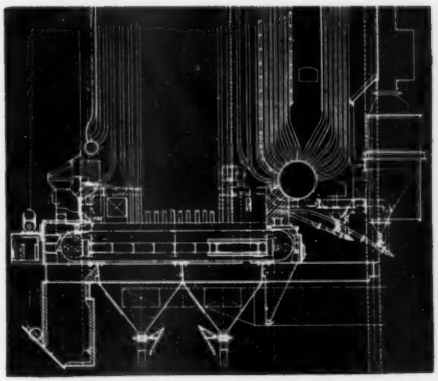

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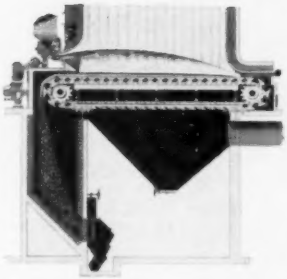

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Kinney Engineers Inc, S P, 201 Second Ave, Carnegie, Pa.
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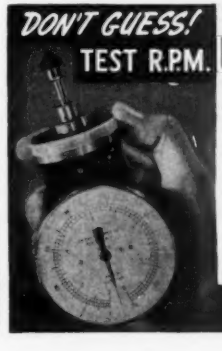
Lakeside Bridge & Steel Co, 5300 N 33rd St, Milwaukee 9, Wis.
Linde Air Products Co, 30 E 42nd St, New York 17, N. Y.
Littleford Bros Inc, 453 E Pearl St, Cincinnati, Ohio
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Nazareth Steel Fabricators Inc, Nazareth, Pa.
National Tube Co, U S Steel Sub, Frick Bldg, Pittsburgh 19, Pa.
Nooter Corp, 1400 S 2nd St, St Louis 4, Mo.
Orange Roller Bearing Co, 557 Main St, Orange, N. J.
Patterson-Kelley Co, Inc, 129 Burson St, East Stroudsburg, Pa.
Protectoseal Co, 1920 S Western Ave, Chicago 8, Ill.
Quaker City Iron Wks, Aramingo Ave & Ontario St, Phila 34, Pa.
Schramm, Inc, West Chester, Pa.
Sims Co, 1402 E 18th St, Erie, Pa.
Smith, A O Corp, 3533 N 27th St, Milwaukee 1, Wis.
Steel Products Corp, 52 Vanderbilt Ave, New York 17, N. Y.
Stover Steel Tank & Mfg Co, 100 S Hancock St, Freeport, Ill.
Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
Union Iron Works, 1420 Cascade St, Erie, Pa.
Whitlock Mfg Co, 46 South St, Elmwood Station, Hartford 10, Conn.
Wickes Boiler Co, 515 N Washington Ave, Saginaw, Mich.

TAPE, ASBESTOS

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Chesterton, A W Co, 6 Ashland St, Everett 49, Mass.
Collins Packing Co, Inc, 401 N Broad St, Philadelphia 8, Pa.
Darcoid Co Inc, 145 Sixth Ave, New York 13, N. Y.
Garlock Packing Co, 402 E Main St, Palmyra, N. Y.
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Johns-Manville, 22 East 40th St, New York 16, N. Y.
Keasbey & Mattison Co, Butler Ave, Ambler, Pa.
National Electric Coil Co, 794 Chambers St, Columbus 16, Ohio
Plant Rubber & Asbestos Wks, 537 Brannan St, San Francisco, Calif.



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Union Asbestos & Rubber Co, Dept 1819, 332 S Michigan Ave, Chicago 4, Ill.
United States Rubber Co, 1230 Ave of Americas, New York 20, N. Y.

TAPE, FRICTION

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
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Goodall Rubber Co, 411 Whitehead Rd, Trenton 4, N. J.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Johns-Manville, 22 East 40th St, New York 16, N. Y.
National Electric Coil Co, 794 Chambers St, Columbus 16, Ohio
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Okonite Co, Canal St, Passaic, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

TAPE, PLASTIC, ELECTRICAL

Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
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Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Johns-Manville, 22 E 40th St, New York 16, N. Y.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

TAPE, RUBBER

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Armstrong Cork Co, Liberty St, Lancaster, Pa.
Boston Woven Hose & Rubber Co, P O Box 1071, Cambridge, Mass.
Gilmer, L H Co, Div U. S. Rubber Co, Tacony, Philadelphia 35, Pa.
Goodall Rubber Co, 411 Whitehead Rd, Trenton 4, N. J.
Goodrich, B F Co, Akron 18, Ohio
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
National Electric Coil Co, 794 Chambers St, Columbus 16, Ohio
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Okonite Co, Canal St, Passaic, N. J.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

TAPE, VARNISHED CAMBRIC

General Electric Co, Chemical Div, Pittsfield, Mass.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
National Electric Coil Co, 794 Chambers St, Columbus 16, Ohio
Roberoid Co, 500 Fifth Ave, New York 18, N. Y.

TELEVISION, INDUSTRIAL

Diamond Power Specialty Corp, Lancaster, Ohio
Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

TEST EQUIPMENT, LUBRICATING OILS

Gerin Corp, Red Bank, N. J.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

TESTERS, VOLTAGE

Associated Research Inc, 3758 W Belmont Ave, Chicago 18, Ill.
Beckman Instruments Inc, 820 Mission St, South Pasadena, Calif.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Greer Hydraulics Inc, 454 18th St, Brooklyn, N. Y.
Holub Industries, 413 DeKalb Ave, Sycamore, Ill.
Ideal Industries Inc, Sycamore, Ill.
I-T-E Circuit Breaker Co, 19th & Hamilton Sts, Philadelphia 30, Pa.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Square D Co, 4041 N Richards St, Milwaukee 12, Wis.
Star Fuse Co Inc, 235 Canal St, New York 13, N. Y.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

THERMOCOUPLES

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Cambridge Instrument Co Inc, 3007 Grand Central Terminal, New York 17, N. Y.
Denver Fire Clay Co, P O Box 5510, Denver 17, Colo.
Engelhard, Charles Inc, 900 Passaic Ave, East Newark, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, 801 Allen Ave, Glendale 1, Calif.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Illinois Testing Labs, 420 S LaSalle St, Chicago 5, Ill.
Leeds & Northrup Co, 4970 Stenton Ave, Philadelphia 44, Pa.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Pyrometer Instrument Co, Bergenfield, N. J.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Tagliabue Instruments Div, Weston Electrical Instrument, Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

THERMOMETERS, DIAL

Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.
Bristol Co, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Fedders-Quigan, 57 Tonawanda St, Buffalo 7, N. Y.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 33, Pa.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Keckley, O C Co, 400 W Madison St, Chicago 6, Ill.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P, Corp, Skokie, Ill.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Precision Thermom & Instr Co, 1401 Brandywine St, Philadelphia 30
Pyrometer Instrument Co, Bergenfield, N. J.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Velan Engrg Co, 6585, Jeanne Mance, P. Q., Canada
Weksler Thermometer Corp, 52 W Houston St, New York 12, N. Y.
Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.

THERMOMETERS, GLASS

Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Precision Thermom & Instr Co, 1401 Brandywine St, Phila 30, Pa.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Weksler Thermometer Corp, 52 W Houston St, New York 12, N. Y.

THERMOMETERS, REMOTE-READING

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Bristol Co, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Fisher & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Fulton Sylphon Div, Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.
Illinois Testing Labs, 420 S LaSalle St, Chicago 5, Ill.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P, Corp, Skokie, Ill.
Mason Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Pyrometer Instrument Co, Bergenfield, N. J.
Republic Flow Meters Co, 2222 Diversey Parkway, Chicago 47, Ill.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P. Q., Canada
Weksler Thermometer Corp, 52 W Houston St, New York 12, N. Y.

THERMOSTATS, DUCT, SURFACE

Allen-Bradley Co, 1326 S 2nd St, Milwaukee 4, Wis.
Barber-Colman Co, Rockford, Ill.
Burling Instrument Co, 5 Vose Ave, South Orange, N. J.
Fenwal Inc, 240 Pleasant St, Ashland, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Ulanet, Geo C, 415 Market St, Newark 5, N. J.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P. Q., Canada
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Wiegand, E L Co, 7506 Thomas Blvd, Pittsburgh 8, Pa.

THERMOSTATS, IMMERSION

Allen-Bradley Co, 1326 S 2nd St, Milwaukee 4, Wis.
Barber-Colman Co, Rockford, Ill.
Burling Instrument Co, 5 Vose Ave, South Orange, N. J.
d'Este Div, Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Edison Thomas A, Inc, Instrument Div, 41 Lakeside Ave, West Orange 3, N. J
Fenwal Inc, 240 Pleasant St, Ashland, Mass.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
H-B Instrument Co, 2633 Trenton Ave, Philadelphia 25, Pa.
Hoffman Specialty Corp, 1001 York St, Indianapolis, Ind.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Klipfel Mfg Co, 1000 Weller Ave, Hamilton, Ohio
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Controls, Inc, Goshen, Ind.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Ulanet, George, Co, 415 Market St, Newark 5, N. J.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P Q, Canada
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wiegand, Edwin L Co, 7506 Thomas Blvd, Pittsburgh 8, Pa.

THERMOSTATS, ROOM OR WALL

Allen-Bradley Co, 1326 S 2nd St, Milwaukee, Wis.
Armstrong Machine Works, 905 Maple St, Three Rivers, Mich.
Barber-Colman Co, Rockford, Ill.
Bahnson Co, 1001 S Marshall St, Winston-Salem, N. C.
Cardox Corp, 307 N Michigan Ave, Chicago 1, Ill.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Fulton Sylphon Div Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
General Electric Co, Air Conditioning Div, 5 Lawrence, Bloomfield, N. J.
Hoffman Specialty Corp, 1001 York St, Indianapolis, Ind.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Penn Controls, Inc, Goshen, Ind.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Velan Engrg Co, 6585, Jeanne Mance, Montreal P Q, Canada
Wiegand, Edwin L Co, 7506 Thomas Blvd, Pittsburgh 8, Pa.

THERMOSTATS, 2-TEMPERATURE

Allen-Bradley Co, 1326 S 2nd St, Milwaukee, Wis.
Barber-Colman Co, Rockford, Ill.
Burling Instrument Co, 5 Vose Ave, South Orange, N. J.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Mercoid Corp, 4201 Belmont Ave, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Wayne & Windrim Aves, Philadelphia 44, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.

THERMOSTATS, WEATHER-COMPENSATING

Barber-Colman Co, Rockford, Ill.
Edison, Thomas A, Inc, Instrument Div, 41 Lakeside Ave, West Orange 3, N. J.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Hoffman Specialty Corp, 1001 York St, Indianapolis, Ind.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.

THICKENERS, CYCLONE

American Cyanamid Corp, 30 Rockefeller Plaza, New York 20, N. Y.

Dorr Co, 568 Lexington Ave, New York, N. Y.
Heyl & Patterson Inc, 55 Water St, Pittsburgh 22, Pa.

TIGHTENERS, BELT

Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas
Medart Co, 100 Potomac St, St Louis 18, Mo.
Robins Conveyors Div, Hewitt-Robins Inc, 270 Passaic Ave, Passaic, N. J.
Rkoads, Jed Sons, 35 North 6th St, Phila 6, Pa.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

TILES, BOILER BAFFLE

Carborundum Co, Perth Amboy, N. J.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Gladding, McBean & Co, 2901 Los Feliz Blvd, Los Angeles, Calif.
Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Green, A P, Fire Brick Co, Mexico, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Plibrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Power Plant Efficiency Co, P O Box 592, 901 Maryland St, Indianapolis 4, Ind.
Quigley Co, Inc, 527 Fifth Ave, New York 17, N. Y.
Walte Construction Co, 111 Westminster St, Providence 3, R. I.

TOOLS, BOILER-TUBE CUTTING

Boiler Tube Co of America, McKees Rock, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Faessler J, Mfg Co, Moberly, Mo.
DoAll Co, Des Plaines, Ill.
Murray, A B, Co Inc, 608 Green Lane, Elizabeth, N. J.
Pipe & Tubular Prods Inc, 8504 Germantown Ave, Philadelphia, Pa.
Wells Mfg Corp, Three Rivers, Mich.
Wiedeke, Gustav, Co, 1833 Richard St, Dayton 10, Ohio

TOOLS, MAINTENANCE

Black & Decker Mfg Co, Towson 4, Md.
Blackhawk Mfg Co, 5325 W Rogers Ave, Milwaukee 1, Wis.
Bonney Forge & Tool Wks, 716 N Meadow St, Allentown, Pa.
Clipper Mfg Co, 2800 Warwick Ave, Kansas City, Mo.
DoAll Co, Des Plaines, Ill.
du Mont Corp, 289 Wells St, Greenfield, Mass.
Durametallic Corp, Factory St, Kalamazoo 24, Mich.
Duro Metal Products Co, 2649 N Kildare Ave, Chicago, Ill.
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Greene, Tweed & Co, 322 Elm Ave, North Wales, Pa.
Ideal Industries Inc, Sycamore, Ill.
Layne-Held Corp, Higginsville, Mo.
Le Roi Co, 1706 S 68th St, Milwaukee 14, Wis.
Mall Tool Co, 7740 S Chicago Ave, Chicago 19, Ill.
Millers Falls Co, 57 Wells St, Greenfield, Mass.
Nicholson File Co, 23 Acorn St, Providence, R. I.
Owatonna Tool Co, 373 Cedar St, Owatonna, Minn.
Reps Tool Co, Inc, 600 New Park Ave, West Hartford 10, Conn.
Schramm Inc, West Chester, Pa.
Sexauer, J A, Mfg Co, 2503 Third Ave, New York 51, N. Y.
Stanley Works, 480 Myrtle St, New Britain, Conn.
Snap-on Tools Corp, Kenosha, Wis.
South Bend Lathe Co, 425 E Mad'son St, South Bend 22, Ind.
Threadwell Tap & Die Co, 16 Arch St, Greenfield, Mass.
Toledo Pipe Threading Machine Co, 1445 Summit St, Toledo 4, Ohio
Trimont Mfg Co, 55 Amory St, Boston 19, Mass.
Walton Co, Box 3, Elmwood Branch, Hartford 10, Conn.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Wells Mfg Corp, Three Rivers, Mich.
Will-Burt Co, Orrville, Ohio
Williams J H & Co, 400 Vulcan St, Buffalo 7, N. Y.

TOOLS, PIPE CUTTING AND THREADING

Barnes Tool Co, 152 Brewery St, New Haven, Conn.
Beaver Pipe Tools Inc, 310 Dana St, N E, Warren, Ohio
DoAll Co, Des Plaines, Ill.
Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Ridge Tool Co, 400 Clark St, Elyria, Ohio
Threadwell Tap & Die Co, 16 Arch St, Greenfield, Mass.
Toledo Pipe Threading Machine Co, 1445 Summit St, Toledo 4, Ohio
Trimont Mfg Co, 55 Amory St, Boston 19, Mass.

TOOLS, PORTABLE, ELECTRIC

Black & Decker Mfg Co, Towson 4, Md.
Buckeye Tools Corp, 29 W Apple St, Dayton 2, Ohio
Chicago Pneumatic Tool Co, 6 E 44th St, New York 17, N. Y.
Clipper Mfg Co, 2800 Warwick Ave, Kansas City, Mo.
Dumore Co, 1225 14th St, Racine, Wis
Graybar Electric Co, Inc, 420 Lexington Ave, New York 17, N. Y.
Holub Industries, Inc, 413 De Kalb Ave, Sycamore, Ill.
Independent Pneumatic Tool Co, Aurora, Ill.
Jay Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Le Roi Co, 1706 S 68th St, Milwaukee 14, Wis.
Mall Tool Co, 7740 S Chicago Ave, Chicago 19, Ill.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Millers Falls Co, 57 Wells St, Greenfield, Mass.
Schramm Inc, West Chester, Pa
Sexauer, J A, Mfg Co, 2503 Third Ave, New York 51, N. Y.
Skilsaw Inc, 5033 N Elston Ave, Chicago 30, Ill.
Stanley Works, 480 Myrtle St, New Britain, Conn.
Syntron Co, 492 Lexington, Homer City, Pa.
Waterbury Tool Div, Vickers, Inc, 188 E Aurora St, Waterbury 67, Conn.
Wells Mfg Corp, Three Rivers, Mich.

TOOLS, PORTABLE, PNEUMATIC

Buckeye Tools Corp, 29 W Apple St, Dayton 2, Ohio
Chicago Pneumatic Tool Co, 6 E 44 St, New York 17, N. Y.
Cleco Div, Reed Roller Bit Co, 5125 Clinton Drive, Houston 20, Texas
Graybar Electric Co, 420 Lexington Ave, New York 17, N. Y.
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Mall Tool Co, 7740 S Chicago Ave, Chicago 19, Ill.
Schramm, Inc, West Chester, Pa.

TOWERS, COOLING

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Bigelow Co, Lloyd & River Sts, New Haven, Conn.
Binks Mfg Co, 3114-40 Carrol Ave, Chicago 2, Ill.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Carr, Clifford H Co, 614 W 67 St, Kansas City 5, Mo.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Curtis Mfg Co, 1905 Kienlen Ave, St Louis 20, Mo.
Farrar & Trefts Inc, 20 Milburn St, Buffalo 12, N. Y.
Fluor Corp, Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Kinney Engineers, Inc, S P, 201 Second Ave, Carnegie, Pa.
Lillie-Hoffman Cooling Towers Inc, 4239 Duncan, St Louis 10, Mo.
Lummus Co, 420 Lexington Ave, New York 17, N. Y.
Marley Co, Inc, 3001 Fairfax Rd, Kansas City 15, Kansas
Marlo Coil Co, 6135 Manchester St, St. Louis 10, Mo.
Nazareth Steel Fabricators Inc, Nazareth, Pa.
Nooter Corp, 1400 S 2nd St, St Louis 4, Mo.
Phillips Cooling Tower Co, Inc, 114 Liberty St, N. Y. 6, N. Y.
Pritchard, J F & Co, 908 Grand Ave, Kansas City 6, Mo.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Santa Fe Tank & Tower Co, 5401 Boyle Ave, Los Angeles 11, Calif.
United Cooling Tower Co, Porter Bldg, Kansas City, Mo.
U. S. Air Conditioning Corp, Como Ave SE at 33rd, Minneapolis 14, Minn.
Water Cooling Equip Corp, New Hampshire & Webster Rd, St Louis 23, Mo.
Wheeler C H, Mfg Co, Lehigh & Sedgley Ave, Philadelphia 32, Pa.

TOWERS, LOADING AND UNLOADING

Bethlehem Steel Co, Bethlehem, Pa.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.

TRACTORS, COAL-PILING

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.
Caterpillar Tractor Co, 600 W Washington St, Peoria 8, Ill.
Hough, Frank G Co, Libertyville, Ill.
LeTourneau, R G, Inc, Peoria, Ill.
Sheppard, R H, Co, Inc, 101 Philadelphia St. Hanover, Pa.

TRANSFORMERS, ELECTRIC, POWER

Acme Electric Corp, Cuba, N. Y.
Albertson Electric Co, 3530 W Pierce St, Milwaukee, Wis.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.
Boston Transformer Co, 202 Sidney St, Cambridge 39, Mass.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Crittenden Transformer Works, 1220 Nadeau St, Los Angeles 1, Calif.
Eisler Engrg Co Inc, 757 S 13th St, Newark 3, N. J.
Etraco Mfg Co, Woods Church Rd, Flemington, N. J.
Federal Telephone & Radio Corp, 100 Kingsland Rd, Clifton, N. J.
Ferranti Electric Inc, 30 Rockefeller Plaza, New York 20, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Hercules Electric & Mfg Co Inc, 2500 Atlantic Ave, Brooklyn 7, N. Y.
I-T-E Circuit Breaker Co, 19th & Hamilton Sts, Phila 30, Pa.
Line Material Co, 700 W Michigan St, Milwaukee 1, Wis.
Jefferson Electric Co, Bellwood, Ill.
Kuhlman Electric Co, Bay City, Mich.
Moloney Elec Co, 5390 Bircher Ave, St Louis, Mo.
Raytheon Mfg Co, Waltham 54, Mass.
Sorgel Electric Co, 842 West National Ave, Milwaukee, Wis.
Standard Transformer Corp, Dana & Park, Warren, Ohio
Stockwell Transformer Corp, 884 W Waterloo Rd, Akron, Ohio
Superior Electric Co, 83 Laurel St, Bristol 2, Conn.
Wagner Electric Corp, 6400 Plymouth Ave, St Louis 14, Mo.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

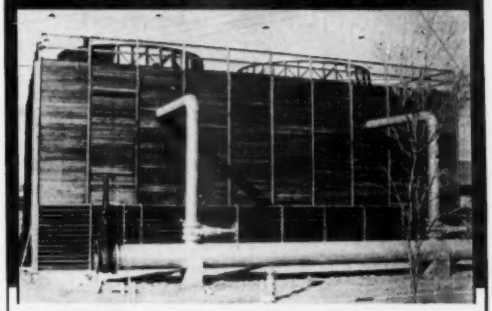
TRANSMISSIONS, ADJUSTABLE SPEED, ELECTRIC

Dynamatic Corp, 3307 14th Ave, Kenosha, Wis.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Lima Electric Motor Co, Findlay Road, Lima, Ohio
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, Ohio
Speed Control Corp, 1450 Depot St, Wickliffe, Ohio
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

TRANSMISSIONS, VARIABLE SPEED, ELECTRIC

Atlantic Gear Works, 200 Lafayette St, New York 12, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Lima Electric Motor Co, Findlay Rd, Lima, Ohio
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Reeves Pulley Co, Columbus, Ind.
Reliance Electric & Engrg Co, 1058 Ivanhoe Rd, Cleveland 10, Ohio

UNITED
COOLING TOWERS



Mechanical and Natural Draft Equipment for All Water Cooling Purposes

Modern United installations serve all fields...power, petroleum, gas, refrigeration...provide low cost water cooling for a wide range of industrial and commercial operations.

All types included...featuring low head distribution, redwood interiors, wood, transite or masonry casings. Complete details in bulletin No. 50. Write for it today.

UNITED COOLING TOWER CO.
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Authorized Representatives in Principal Cities

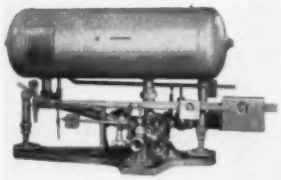
Speed Control Corp, 1450 Depot St, Wickliffe, Ohio
Sterling Electric Motors Inc, 5401 Anaheim-Telegraph Rd, Los Angeles 22, Calif.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

TRANSMISSIONS, VARIABLE SPEED, HYDRAULIC

American Blower Corp, Detroit 32, Mich.
Berry Div, Oliver Iron & Steel Corp, S 10th & Muriel Sts, Pittsburgh 3, Pa.
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Reeves Pulley Co, Columbus, Ind.
Twin-Disc Clutch Co, 1328 Racine St, Racine, Wis.
Vickers Inc, 1596 Oakman Blvd, Detroit, Mich.

TRANSMISSIONS, VARIABLE SPEED, MECHANICAL

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Atlantic Gear Works, 200 Lafayette St, New York 12, N. Y.
Dodge Mfg Corp, Mishawaka, Ind.
Lima Electric Motor Co, Findlay Rd, Lima, Ohio
Link-Belt Co, 2045 W Hunting Park Ave, Philadelphia 40, Pa.
Lovejoy Flexible Coupling Co, 5070 W Lake St, Chicago 44, Ill.
Mercon Regulator Co, 2357 N 29th St, Milwaukee 10, Wis.
Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.
Morse Chain Co, 7601 Central Ave, Detroit 8, Mich.
Palmer-Bee Co, 1710 Poland Ave, Detroit, Mich.
Philadelphia Gear Wks Inc, G St & Erie Ave, Philadelphia 34, Pa.
Reeves Pulley Co, Columbus, Ind.
Speed Control Corp, 1450 Depot St, Wickliffe, Ohio
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Sterling Electric Motors, Inc, 5401 Anaheim-Telegraph Rd, Los Angeles 22, Calif.
U. S. Electrical Motors, 200 E Slauson Ave, Los Angeles 54, Calif.
Vickers Inc, 1402 Oakman Blvd, Detroit, Mich.

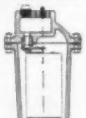


THE NEW
Acker
DEAERATING AND EQUALIZING SYSTEMS
Save Your Boilers, Pipes, Valves, and Fittings
Manufacturers of Automatic Boiler Feeding, Deaerating and Steam Drainage Equipment and Traps.
A few territories open for sales representatives. Liberal commissions. Write.
SAVE Hundreds of Dollars a Year That You Now Lose in Fuel and Water Costs.
W. M. ACKER ORGANIZATION, INC.
3167 FULTON RD. CLEVELAND 9, OHIO

No Moisture Removal System is Complete . . . without Economical Armstrong Air Traps

No. 71 Snap Action Trap $43.00

No. 21 Ball Float Trap $16.00


No. 213 Inverted Bucket Trap $29.00

KEEP your expensive moisture removal equipment at top efficiency—automatically drain these vital units of the moisture they collect with low cost Armstrong Air Traps. Armstrong traps on separators, aftercoolers, etc., save you air, time and labor, eliminate human failure.

Ruggedly built, these units are available in three types, ball float, snap action or inverted bucket models to give you best service for a given condition.

Bulletin No. 1433 gives the details.

Local stocks mean quick delivery. Act today.

ARMSTRONG MACHINE WORKS
812 Maple St. • Three Rivers, Michigan

ARMSTRONG *Air* TRAPS

Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Worthington Corp, Harrison, N. J.

TRAPS, CINDER

Buell Engrg Co Inc, 70 Pine St, New York 5, N. Y.
Green Fuel Economizer Co Inc, 627 Main St, Beacon, N. Y.
Prat-Daniel Corp, 2 Meadow St, South Norwalk, Conn.

TRAPS, COMPRESSED-AIR

(See Also Separators)
Acker, Wm Org, 3617 Fulton Rd, Cleveland, Ohio
Adams, R P Co, Inc, 237 E Park Drive, Buffalo 17, N. Y.
Armstrong Machine Works, 905 Maple St, Three Rivers, Wis.
Clark Mfg Co, 1630 E 38th St, Cleveland 14, Ohio
Cryer Trap & Valve Co, 366 Madison Ave, New York 17, N. Y.
De Vilbiss Co, 300 Phillips Ave, Toledo 1, Ohio
Dollinger Corp, 23 Centre Park, Rochester 3, N. Y.
Illinois Engineering Co, Racine Ave & 20th Place, Chicago 8, Ill.
Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
McAuley Trap Co, Dept 702, 405 Penn Ave, Pittsburgh 22, Pa.
Nicholson, W H, & Co, 125 Oregon St, Wilkes-Barre, Pa.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Schrader's, A, Son, 470 Vanderbilt Ave, Brooklyn, N. Y.
Schramm, Inc, West Chester, Pa.
Squires, C E, Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Sterling Engrg & Mfg Corp, 110 Business St, Hyde Park 36, Mass.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Templeton Mfg Co, Hyde Park 36, Boston, Mass.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

TRAPS, OIL

Frick Co, W Main St, Waynesboro, Pa.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Kieley & Mueller, Inc, 2013 43rd St, North Bergen, N. J.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Sterling Engrg & Mfg Corp, 110 Business St, Hyde Park 36, Boston, Mass.
Zurn, J A, Mfg Co, 1801 Pittsburgh Ave, Erie, Pa.

TRAPS, RADIATOR

Barnes & Jones, Inc, 128 Brookside Ave, Boston 30, Mass.
Cashin W D Co, 69 "A" St, Boston 27, Mass.
Cryer Trap & Valve Co Inc, 366 Madison Ave, N. Y. 17, N. Y.
Dunham C A Co, 400 W Madison St, Chicago 6, Ill.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Marsh, Jas P, Corp, Skokie, Ill.
Nicholson, W H & Co, 125 Oregon St, Wilkes-Barre 1, Pa.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Sterling Inc, 3738 N Holton St, Milwaukee 12, Wis.
Squires, C E Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Trane Co, LaCrosse, Wis.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P Q, Canada
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.

TRAPS, RETURN

Acker, W M, Organization, 3167 Fulton Rd, Cleveland, Ohio
Cashin W D Co, 69 "A" St, Boston 27, Mass.
Cryer Trap & Valve Co Inc, 366 Madison Ave, New York 17, N. Y.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Johnson Corp, 805 Wood St, Three Rivers, Mich.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Marsh, Jas P, Corp, Skokie, Ill.
Morehead Mfg Co, 2455 W Warren Ave, Detroit 8, Mich.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Sterling Engrg & Mfg Corp, 110 Business St, Hyde Park 36, Boston, Mass.
Sterling Inc, 3738 N Holton St, Milwaukee 12, Wis.
Templeton Bros, 169 Reservation Rd, Hyde Park 36, Mass.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P Q, Canada
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.

TRAPS, STEAM

Acker, W M, Organization, 3167 Fulton Rd, Cleveland, Ohio
American District Steam Co, Bryant St, North Tonawanda, N. Y.
Anderson, V D, Co, 1935 W 96th St, Cleveland 2, Ohio
Armstrong Machine Works, 905 Maple St, Three Rivers, Mich.
Barnes & Jones Inc, 128 Brookside Ave, Boston 30, Mass.
Clark Mfg Co, 1830 E 38th St, Cleveland 14, Ohio
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Coe Mfg Co, Bank St, Painesville, Ohio
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Cryer Trap & Valve Co Inc, 366 Madison Ave, N. Y. 17, N. Y.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N. J.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Fisher Governor Co, Marshalltown, Iowa
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Johnson Corp, 865 Wood St, Three Rivers, Mich.
Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
McAlear Co, 1901 S Western Ave, Chicago 8, Ill.
Marsh, Jas P, Corp, Skokie, Ill.
Morehead Mfg Co, 2455 W Warren Ave, Detroit 8, Mich.
Nicholson, W H & Co, 125 Oregon St, Wilkes-Barre 1, Pa.
Owens, Henry & Co, Inc, 51 Washington Ave, Cranston 7, R I
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Schaub, Fred H Engrg Co, 2110 S Marshall Blvd, Chicago 23, Ill.
Squires, C E Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Sterling Engrg & Mfg Corp, 110 Business St, Hyde Park 36, Mass.
Sterling Inc, 3738 N Holton St, Milwaukee 12, Wis.
Stickle Steam Specialty Co, 2265 Valley Ave, Indianapolis 1, Ind.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P Q, Canada
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.
Williams Gauge Co, 2055 Pennsylvania Ave, Pittsburgh 33, Pa.
Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.
Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

TRAPS, VACUUM

Acker, W M, Organization, 3167 Fulton Rd, Cleveland, Ohio
Cashin, W D Co, 69 "A" St, Boston 27, Mass.
Clark Mfg Co, 1830 E 38th St, Cleveland 14, Ohio
Cryer Trap & Valve Co, 366 Madison Ave, New York 17, N. Y.
Dunham, C A Co, 400 W Madison St, Chicago 6, Ill.
Hoffman Specialty Co, 1001 York St, Indianapolis, Ind.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.

Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Morehead Mfg Co, 2455 W Warren Ave, Detroit 8, Mich.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Sterling Engrg & Mfg Corp, 110 Business St, Boston 36, Mass.
Stickle Steam Specialty Co. 2265 Valley Ave, Indianapolis 1, Ind.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Templeton Bros, 169 Reservation Rd, Hyde Park 36, Mass.
Velan Engrg Co, 6585, Jeanne Mance, Montreal, P Q, Canada
Webster, Warren & Co, 17th & Federal Sts, Camden, N. J.

TREADS, FLOOR AND STAIR

American Abrasive Metals Co, 460 Coit St, Irvington, N. J.
American Mason Safety Tread Co, 125 Perry St, Lowell, Mass.
Bates, Walter Co, 500 Mills Rd, Joliet, Ill.
Borden Metal Products Co, Green Lane, Box 72, Elizabeth, N. J.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Dura-Tred Co, 353 N Central Park Blvd, Chicago 24, Ill.
Kirk & Blum Mfg Co, 2874 Spring Grove Ave, Cincinnati 25, Ohio
Murray, A B, Co, Inc, 608 Green Lane, Elizabeth, N. J.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
Norton Co, 1 New Bond St, Worcester 6, Mass.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

TROLLEYS, TRACKS, AND TRAMWAYS, OVERHEAD

Colorado Fuel & Iron Corp, Continental Oil Bldg, Denver 1, Colo.
Ford Chain Block Div, American Chain & Cable Co Inc, 2nd & Diamond Sts, Phila, Pa.
Hendrick Mfg Co, P O Box 497, Carbondale, Pa.
Lamson Corp, Lamson St, Syracuse 1, N. Y.
Link-Belt Co, 301 W Pershing Road, Chicago 8, Ill.
Shaw-Box, Crane & Hoist Div, Manning, Maxwell & Moore Inc, Muskegon, Mich.
Palmer-Bee Co, 1710 Poland Ave, Detroit 12, Mich.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

TUBES, BOILER, SUPERHEATER

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Babcock & Wilcox Co, Tubular Products Div, Beaver Falls, Pa.
Bethlehem Steel Co, Bethlehem, Pa.
Bigelow Co, Lloyd & River Sts, New Haven, Conn.
Boiler Tube Co of America, McKees Rocks, Pa.
Globe Steel Tubes Co, 3839 W Burnham St, Milwaukee 4, Wis.
Jones & Laughlin Steel Corp, 3rd Ave & Ross St, Pittsburgh 30, Pa.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
National Supply Co, Grant Bldg, Pittsburgh 30, Pa.
National Tube Co, U S Steel Sub, Frick Bldg, Pittsburgh 19, Pa.
Pipe & Tubular Prods, Inc, 8504 Germantown Ave, Phila, Pa.
Pittsburgh Steel Co, Dept PG, Grant Bldg, Pittsburgh 30, Pa.
Standard Tube Co, 24400 Plymouth Rd, Detroit, Mich.
Steel & Tubes Div, Republic Steel Corp, 218 E 131st St, Cleveland 8, Ohio
Timken Roller Bearing Co, 1835 Deuber Ave, SW, Canton 6, Ohio

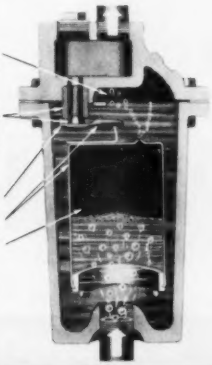
TUBES, CONDENSER

Aluminum Co of America, Dept 11, 670 Gulf Bldg, Pittsburgh 19, Pa.
American Brass Co, 414 Meadow St, Waterbury, Conn.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Babcock & Wilcox Tubular Products Div, Beaver Falls, Pa.
Bethlehem Steel Co, Bethlehem, Pa.
Boiler Tube Co of America, McKees Rocks, Pa.

ARMSTRONG TRAPS

- **Save Fuel**
- **Save Maintenance**
- **Keep Equipment Hot**

Because . . .



Air is automatically discharged ahead of condensate.

Valve and seat are chrome steel, hardened, ground and lapped to *steam-tight* fit.

Leverage is "frictionless".

Interior trim is stainless.

No steam ever reaches orifice, to escape.

SEND FOR 44-Page STEAM TRAP BOOK. Free on Request.

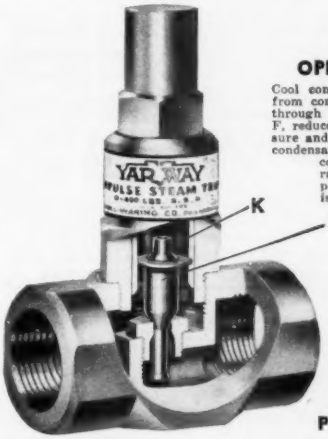
ARMSTRONG MACHINE WORKS
812 Maple Street, Three Rivers, Michigan

YARWAY IMPULSE STEAM TRAPS

With Yarway Impulse Steam Traps on the job, equipment not only gets hot in a hurry . . . it *stays hot*. That's because when condensate load is heavy, Yarways discharge *continuously* until the lines and jackets are cleared. Then when equipment reaches working temperature the discharge is *intermittent*, keeping it at peak efficiency.

The small size of Yarway traps permits easy installation anywhere. Maintenance is minimum. Yarways have but one moving part, a simple valve . . . no floats, buckets, bellows or diaphragms. Trap body is machined from stainless steel bar stock. Low in cost.

For complete description write for Bulletin T-1740

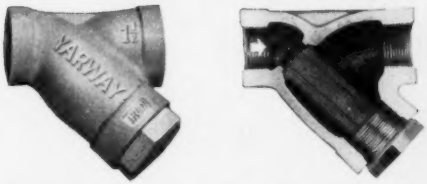


OPERATION

Cool condensate, flowing from control chamber K through center of valve F, reduces chamber pressure and valve lifts. Hot condensate vaporizes in control chamber raising chamber pressure and closing valve.

OVER 800,000 PURCHASED

YARWAY STRAINERS



Yarway Fine-Screen Strainers offer three improved features for better screening and cheaper maintenance. (1) Monel woven wire screen gives maximum screening with minimum restrictions of flow. (2) Screen cap has machined face and gasket for tight joint or easy removal; straight threads guide screen into place when re-assembling. (3) Body is cadmium plated to prevent rusting.

Ten standard sizes from ¼" to 3". Iron body for pressures up to 250 lb.; steel body for pressures up to 600 lb. Write for Bulletin S-203.

See other Yarway Advertisements on pages 74, 78, 108, 115

YARNALL-WARING COMPANY
100 MERMAID AVE., PHILA. 18, PA.

Bridgeport Brass Co, 30 Grand St, Bridgeport 2, Conn.
Carpenter Steel Co, P O Box 116, Roselle, N. J.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Globe Steel Tubes Co, 3839 W Burnham St, Milwaukee 4, Wis.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
National Tube Co, U S Steel Sub, Frick Bldg, Pittsburgh 19, Pa.
Pipe & Tubular Prods, Inc, 8504 Germantown Ave, Phila, Pa.
Pittsburgh Steel Co, Dept PG, Grant Bldg, Pittsburgh 30, Pa.
Revere Copper and Brass Inc, 230 Park Ave, New York 17, N. Y.
Scovill Mfg Co, 99 Mill St, Waterbury 91, Conn.
Standard Tube Co, 24400 Plymouth Rd, Detroit, Mich.
Steel & Tubes Div, Republic Steel Corp, 218 E 131st St, Cleveland 8, Ohio
Timken Roller Bearing Co, 1835 Deuber Ave, SW, Canton 6, Ohio
Wheeler, C H Mfg Co, Lehigh & Sedgley Ave, Philadelphia, Pa.
Wolverine Tube Div, 1850 Guardian Bldg, Detroit 26, Mich.

TUBES, FINNED

Alco Products Div, American Locomotive Co, Dunkirk
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Bush Mfg Co, 179 South St, West Hartford 10, Conn.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Heat-X-Changer Co, Brewster, N. Y.
Joy Mfg Co, Dept 5, Oliver Bldg, Pittsburgh 22, Pa.
Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Wolverine Tube Div, 1850 Guardian Bldg, Detroit 26, Mich.

TUBES, PITOT

Dwyer, F W, Mfg Co, 317 S Western Ave, Chicago, Ill.
Ellison Draft Gage Co, 214 W Kinzie St, Chicago 10, Ill.

TUBING, PNEUMATIC, ARMORED

Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio

TUBING, FLEXIBLE METAL

(See Hose, Metal, Flexible)

TUBING GLASS

Chesterton, A W Co, 6 Ashland St, Everett 49, Mass.
Corning Glass Works, Corning, N. Y.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.

TURBINES, GAS

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Clark Bros Co, Inc, Olean, N. Y.
Elliott Co, Jeannette, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Westinghouse Electric Corp, Braddock Ave, East Pittsburgh, Pa.

TURBINES, HYDRAULIC

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Hunt, Rodney, Machine Co, Orange, Mass.
Leffel, James & Co, 426 East St, Springfield, Ohio
Smith, S Morgan, Co, 500 Lincoln St, York, Pa.
Twin Disc Clutch Co, 1328 Racine St, Racine, Wis.

TURBINES, STEAM, GENERATOR DRIVE, 7500 KW AND UNDER

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
DeLaval Steam Turbine Co, Trenton 2, N. J.
Elliott Co, Jeannette, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.
Terry Steam Turbine Co, P O Box 1200, Hartford 1, Conn.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Worthington Corp, Harrison, N. J.

TURBINES, STEAM, GENERATOR DRIVE, OVER 7500 KW

Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
DeLaval Steam Turbine Co, Trenton 2, N. J.
Elliott Co, Jeannette, Pa.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Worthington Pump & Machy Corp, Harrison, N. J.

TURBINES, STEAM, MECHANICAL DRIVE

Brown Boveri Corp, 19 Rector St, New York 6, N. Y.
Coppus Engrg Corp, 344 Park Ave, Worcester 2, Mass.
DeLaval Steam Turbine Co, Trenton 2, N. J.
Elliott Co, Jeannette, Pa.
General Electric Co, Appartus Sales Div, Schenectady 5, N. Y.
Murray Iron Works Co, 1106 Washington St, Burlington, Iowa
Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.

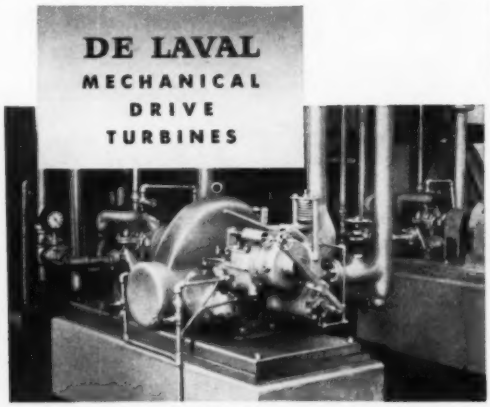
for all pressures all temperatures!

Catawissa PERFECT SEAL *Unions*

HOT FORGED CARBON STEEL — A TYPE FOR EVERY USE! — FULL ALLOY AND FULL STAINLESS

Standard and Double Extra Heavy; Orifice; Male & Female; Lug Nut. Choice of seats, socket weld or screwed ends. WRITE FOR CATALOG.

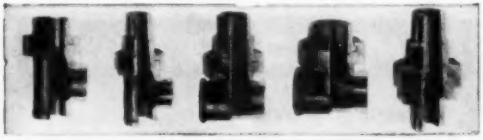
CATAWISSA VALVE & FITTINGS CO.
206 MILL STREET • CATAWISSA, PENNA.

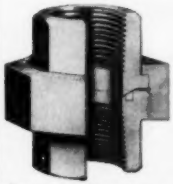


De Laval offers two major types of single-stage mechanical drive turbines. The CA turbine is designed for pressures to 600 psig, temperatures up to 750F, back pressures to 75 psig, for horsepowers to 1,200. The CP turbine handles pressures to 1,450 psig, temperatures up to 950F, back pressures to 300 psig, for horsepowers to 2,000. With a De Laval CA or CP turbine, you have a wide choice of eight different types of governors to meet any control requirements. Bulletins 82-19R and 4215 give data on CA and CP units.

DE LAVAL STEAM TURBINE COMPANY
Trenton 2, New Jersey

DL 1348





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Whiton Machine Co, 190 Howard St, New London, Conn.
Wing, L J, Mfg Co, 50 Vreeland Hill Rd, Linden, N. J.
Worthington Corp, Harrison, N. J.

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General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.

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Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
General Metals Corp, 18th & Florida Sts, San Francisco 10, Calif.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Jarecki Mfg Co, 1345 W 12 St, Erie, Pa.
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Thornhill-Craver Co, Inc, 1111 Lockwood Dr, Houston 1, Texas
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.

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Frick Co, W Main St, Waynesboro, Pa.
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Murray, A B Co, Inc, 608 Green Lane, Elizabeth, N. J.
Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.
Vogt, Henry, Machine Co, 1000 W Ormsby St, St. Louisville 10, Ky.
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Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Stockham Vales & Fittings, 4000 10th Ave, Birmingham, Ala.
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Walworth Co, 60 E 42nd St, New York 17, N. Y.

VALVE OPERATORS, HAND-CHAIN

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Babbitt Steam Specialty Co, 55 S Water St, New Bedford, Mass.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Edward Valves, Inc, 1200 W 145th St, East Chicago, Ind.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Ludlow Valve Mfg Co, Inc, Foot of Adams St, Troy, N. Y.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Philadelphia Gear Works, Inc, G St & Erie Ave, Phila 34, Pa.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Rockwell, W S, Co, 200 Elliot St, Fairfield, Conn.
Walworth Co, 60 E 42nd St, New York 17, N. Y.

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Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Barber-Colman Co, Rockford, Ill.
Brooke Engrg Co, Inc, 4517 Wayne Ave, Philadelphia 20, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Clow, James B & Sons, 201-299 N Talman Ave, Chicago, Ill.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis, Mo.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
General Controls Co, 801 Box 3517 Grand Central Sta, Glendale 1, Calif.
General Regulator Corp, 165 Broadway, New York 6, N. Y.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Ludlow Valve Mfg Co, Inc, Foot of Adams St, Troy, N. Y.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Philadelphia Gear Wks Inc, G St & Erie Ave, Philadelphia 34, Pa.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Taylor Instrument Cos, 95 Ames St, Rochester, N. Y.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

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Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Cleco Div, Reed Roller Bit Co, 5125 Clinton Drive, Houston 20, Texas
Climax Controls Div, Black, Sivalls & Bryson, Box 1529, Tulsa 1, Okla.
Conoflow Corp., 2100 Arch St, Philadelphia 3, Pa.
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Defender Instrument & Regulator Co, 815 Clark St, St. Louis 2, Mo.
Fisher Governor Co, Marshalltown, Iowa
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Mason-Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
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Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
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Economy Valve Seat Co, 1436 N Keating Ave, Chicago 18, Ill.
Leavitt Machine Co, 10 E River St, Orange, Mass.
Mercon Regulator Co, 2357 N 29th St, Milwaukee 10, Wis.
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Cochrane Corp, 17th & Allegheny Ave, Philadelphia 32, Pa.

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Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla.
Copes-Vulcan Div, Continental Foundry & Machine Co, Erie, Pa.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
d'Este Div, Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Keckley, D C, Co, 400 W Madison St, Chicago 6, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
Locke Regulator Co, Walters & Osborne St, Salem, Mass.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
Mason-Neilan Regulator Co, Adams St, Boston 24, Mass.
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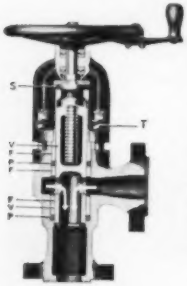


Seatless Type

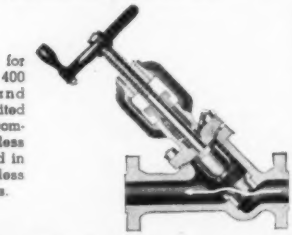
Made in several styles for working pressures up to 1500 lbs. Angle and straightway.

OPERATION: After valve has been closed, shoulder S on plunger V contacts upper follower gland F, forcing it down into body and compressing packing P above and below port, making an absolutely tight valve. Yoke tension springs T maintain continuous compression on packing train. Alemite lubrication of plunger and stem.

Send for celluloid working model and Bulletins B-425 and B-433.

Hard-Seat Type

Made in several styles for working pressures from 400 to 2500 lbs. Angle and straightway (shown). Stellited seat and disk. A worthy companion to the Yarway Seatless Valve, and frequently used in Tandem with the Seatless Valve for higher pressures.



Tandems

Fig. 1. Yarway Type "B" Seatless Tandem Valve with balanced sliding plunger. For pressures to 400 lbs.

Fig. 2. Yarway Type "C" Seatless Tandem for pressures to 600 lbs.

Fig. 1

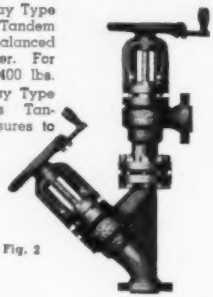


Fig. 2

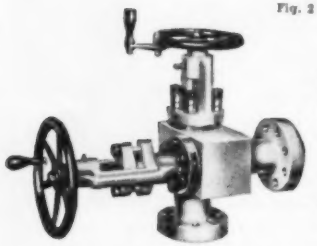


Fig. 3. Yarway Unit Tandem Valve in which blowing valve and sealing valve are mounted together in one - piece forged steel body. Pressures 600 to 2,500 lbs.

Write for Bulletins B-425 and B-433.

See other Yarway Advertisements on pages 74, 78, 105, 115

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Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Watson Stillman Co, 108 Alden Rd, Roselle, N. J.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio

VALVES, BLOWOFF

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Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Everlasting Valve Co, 49 Fisk St, Jersey City 5, N. J.
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.
Parecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Kaye & MacDonald, 11-15 Central Ave, West Orange, N. J.
Ludlow Valve Mfg Co Inc, Foot of Adams St, Troy, N. Y.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
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Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
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Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

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Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Hammel-Dahl Co, 243 Richmond St, Providence 3, R. I.
Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.
Ludlow Valve Mfg Co, Ft of Adams St, Troy, N. Y.
Ohio Injector Co, 100 Ejector St, Wadsworth, Ohio
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati, Ohio
Pratt, Henry Co, 2222 S Halstead St, Chicago 8, Ill.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Rockwell, W S Co, 200 Eliot St, Fairfield, Conn.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.

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Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Blackhawk Mfg Co, 5325 W Rogers St, Milwaukee 1, Wis.
Catawissa Valve & Fittings Co, 206 Mill St, Catawissa, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Clow, James B, & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
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Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
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Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
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Lunkenheimer Co, P O Box 360 Annex Station, Cincinnati 14, Ohio
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Mark, Clayton, & Co, 1900 Dempster St, Evanston, Ill.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
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Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Pennsylvania Pump & Compressor Co, P O Box 222, Easton, Pa.
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Williams Gauge Co, 2055 Pennsylvania Ave, Pittsburgh 33, Pa.
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Cash, A W Valve Mfg Corp, 6616 E Wabash Ave, Decatur, Ill.
Clark Controller Co, 1146 E 152 St, Cleveland 10, Ohio
Cleco Div Reed Roller Bit Co, 5125 Clinton Drive, Houston 20, Texas
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
DeVilbiss Co, 300 Phillips Ave, Toledo 1, Ohio
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Farris Engrg Co, 400 Commercial Ave, Palisades Park, N. J.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Grinnell Co, 260 W Exchange St, Providence 1, R. I.
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Bristol Co, Waterbury 20, Conn.
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Cash, A W Valve Mfg Corp, 6616 E Wabash Ave, Decatur, Ill.
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Defender Instrument & Regulator Co, 815 Clark Ave, St. Louis 2, Mo.
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Farris Engrg Co, 400 Commercial Ave, Palisades Park, N. J.
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Fischer & Porter Co, 509 County Line Rd, Hatboro, Pa.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Golden-Anderson Valve Specialty Co, Keenan Bldg, Pittsburgh 22, Pa.
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Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
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Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
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Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
Leslie Co, 255 Grant Ave, Lyndhurst, N. J.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
Mason-Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Natural Gas Equip Inc, 190 E Glenarm St, Pasadena 2, Calif.
New York Belting & Packing Co, 1 Market St, Passaic, N. J.
North American Mfg Co, 4455 E 71st St, Cleveland 5, Ohio
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Paul Valve Corp, 683 Third Ave, New York 17, N. Y.
Penn Industrial Instrument Corp, 4110 Haverford Ave, Phila 4, Pa.
Perfex Corp, 500 W Oklahoma Ave, Milwaukee 7, Wis.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Ruggles-Klingemann Mfg Co, Foster Court, Salem, Mass.
Schade Valve Mfg Co, 2527 N Bodine St, Phila 33, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Spence Engrg Co Inc, Walden, N. Y.
Stack Heater Co, 80 Batterymarch St, Boston 10, Mass.
Stickle Steam Specialty Co, 2265 Valley Ave, Indianapolis 1, Ind.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio
Taglialbue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester 1, N. Y.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.
Waters Governor Co, 53 Waters Ave, Everett 49, Mass.
Watts Regulator Co, 10 Embankment St, Lawrence, Mass.
York Corp, York, Pa.

VALVES, FLOAT

Alco Valve Co, 865 Kingsland Ave, St Louis 5, Mo.
Associated Valve & Engrg Co, 1150 W Marquette Rd, Chicago 21, Ill.
Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Black, Sivalls & Bryson Inc, Power & Light Bldg, Kansas City 6, Mo.
Climax Controls Div, Black, Sivalls & Bryson Inc, Box 1529, Tulsa 1, Okla.
Copes-Vulcan Div, Continental Foundry & Machine Co, Erie, Pa.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
d'Este Div, Kaye & MacDonald Inc, 11-15 Central Ave, West Orange, N. J.
Duriron Co, Inc, Dayton, Ohio
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Economy Pumps Inc, 1000 Weller Ave, Hamilton, Ohio
Fisher Governor Co, Marshalltown, Iowa
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Frick Co, W Main St, Waynesboro, Pa.
Golden Anderson Valve Specialty Co, Keenan Bldg, Pittsburgh 22, Pa.
Illinois Engrg Co, Racine Ave & 20th Place, Chicago 8, Ill.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
McDonell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.
Mercon Regulator Co, 2357 N 29th St, Milwaukee 10, Wis.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Ruggles-Klingemann Mfg Co, Foster Court, Salem, Mass.
Schade Valve Mfg Co, 2527 N Bodine St, Phila 33, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Stets Co, 1440 Broadway, New York 18, N. Y.
Trane Co, La Crosse, Wis.
Waters Governor Co, 53 Waters Ave, Everett 49, Mass.
Watts Regulator Co, 10 Embankment St, Lawrence, Mass.
Zurn, J A, Mfg Co, 1801 Pittsburgh Ave, Erie, Pa.

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VALVES, FLUSHING

Coyne & Delany, 832 Kent Ave, Brooklyn 5, N. Y.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.
Sexauer, J A, Mfg Co, 2503 3rd Ave, New York 51, N. Y.
Sloan Valve Co, 4300 W Lake St, Chicago 24, Ill.

VALVES, FOOT

Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Cochrane Corp, 17th & Allegheny Ave, Philadelphia 32, Pa.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Durabla Mfg Co, 114 Liberty St, New York 6, N. Y.
Durlron Co, Inc, Dayton, Ohio
Jarecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Kennedy Valve Mfg Co Inc, Troy, N. Y.
Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.
Sims Pump Valve Co, Inc, 145 Hudson St, New York 13, N. Y.
Watworth Co, 60 E 42nd St, New Yurk 17, N. Y.
Williams Gauge Co, 2055 Pennsylvania Ave, Pittsburgh 33, Pa.
Zurn, J A, Mfg Co, 1801 Pittsburgh Ave, Erie, Pa.

VALVES, FORGED STEEL

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh, Pa.
Cameron Iron Works, P O Box 1212, Houston, Texas
Catawissa Valve & Fittings Co, 206 Mill St, Catawissa, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Clark Mfg Co, 1830 E 38th St, Cleveland 14, Ohio
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
Jerguson Gage & Valve Co, 87 Fellsway, Somerville, Mass.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Penberthy Injector Co, Div Buffalo Eclipse Corp, 1242 Holden Ave, Detroit 2, Mich.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Sivyer Steel Casting Co, 1675 S 43rd St, Milwaukee 14, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.

VALVES, GATE

Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
Ampco Metal Inc, 1701 S 38th St, Milwaukee 46, Wis.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Barkesdale Valves, 1566 E Slauson Ave, Los Angeles 11, Calif.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Filer & Stowell Co, 147 Becher St, Milwaukee 7, Wis.
Hunt, Rodney, Machine Co, Orange, Mass.
Jarecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 10, Ohio
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Koppers Co, Inc, 200 Scott St, Baltimore, Md.
Leffel, James & Co, 426 East St, Springfield, Ohio
Ludlow Valve Mfg Co, Inc, Foot of Adams St, Troy, N. Y.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
M & H Valves & Fittings Co, P O Box 909, Anniston, Ala.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Mueller Co, 512 W Cerro Gordo St, Decatur 70, Ill.
Murray, D J Mfg Co, Wausau, Wis.
Ohio Brass Co, 380 N Main St, Mansfield 7, Ohio
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Rockwell, W S Co, 200 Elliot St, Fairfield, Conn.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Sivyer Steel Casting Co, 1675 S 43rd St, Milwaukee 14, Wis.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio
Worthington Corp, Harrison, N. J.
York Corp, York, Pa.

VALVES, GLOBE

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Cooper Alloy Foundry Co, Bloy St & Reading Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Frick Co, W Main St, Waynesboro, Pa.
Grinnell Co Inc, 260 W Exchange St, Providence 1, R. I.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
Hunt, Rodney, Machine Co, Orange, Mass.
Jarecki Valve Div, 1150 N Peoria, Tulsa, Okla.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Jerguson Gage & Valve Co, 87 Fellsway, Somerville, Mass.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Lunkenheimer Co, P O Box 360 Annex Station, Cincinnati 14, Ohio
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P, Corp, Skokie, Ill.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
National Carbon Co Inc, 30 E 42nd St, New York 17, N. Y.
Ohio Brass Co, 380 N Main St, Mansfield 7, Ohio
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Sherman, H B, Mfg Co, 22 Barney, Battle Creek, Mich.
Sivyer Steel Casting Co, 1675 S 42nd St, Milwaukee 14, Wis.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Strahman Valves, Inc, 16 Hudson St, New York 13, N. Y.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio
York Corp, York, Pa.

VALVES, INDICATOR

Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Clow, James B & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
Cookco Engrg Co, 1737 Howard Ave, Chicago 26, Ill.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Edward Valves, Inc, 1200 W 145th St, E Chicago, Ind.
Hauck Mfg Co, 136 E 10th St, Brooklyn 15, N. Y.
Hunt, Rodney, Machine Co, Orange, Mass.
Jerguson Gage & Valve Co, 87 Fellsway, Somerville, Mass.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Ludlow Valve Mfg Co Inc, Foot of Adams St, Troy, N. Y.
Lunkenheimer Co, P O Box 360 Annex Station, Cincinnati 14, Ohio
M & H Valve & Fittings Co, P O Box 909, Anniston, Ala.
Mueller Co, 512 W Cerro Gordo St, Decatur 70, Ill.
Nugent, Wm W & Co, Inc, 402 Hermitage Ave, Chicago 22, Ill.
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Tejax Engineering Corp, P O Box 1134, Providence 1, R. I.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio

VALVES, MIXING, STEAM WATER

Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Fulton Sylphon Div Robertshaw-Fulton Controls Co, Knoxville 4, Tenn.
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Hammel-Dahl Co, 243 Richmond St, Providence 3, R. I.
Hoffman Specialty Corp, 1001 York St, Indianapolis, Ind.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Klipfel Valves Inc, 1000 Weller Ave, Hamilton, Ohio
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Powers Regulator Co, 3400 Oakton St, Skokie, Ill.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Sarco Co Inc, Empire State Bldg, New York 1, N. Y.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Stack Heater Co, 80 Batterymarch St, Boston 10, Mass.
Strahman Valves, Inc, 16 Hudson St, New York 13, N. Y.
Symmons Engrg Co, 791 Tremont St, Boston 18, Mass.
Taco Heaters Inc, 137 South St, Providence, R. I.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Watts Regulator Co, 10 Embankment St, Lawrence, Mass.

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VALVES, MOTOR OPERATED

Andale Co, 1604 Arch St, Philadelphia, Pa.
Associated Valve & Engrg Co, 1150 W Marquette Rd, Chicago 21, Ill.
Automatic Temperature Control Co, 5212 Pulaski Ave, Phila 44, Pa.
Barber-Colman Co, Rockford, Ill.
Brown Instrument Div, Minneapolis-Honeywell Regulator Co, 4490 Wayne Ave, Philadelphia 44, Pa.
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Clow, James B, & Sons, 201-299 N Talman Ave, Chicago 12, Ill.
Cochrane Corp, 17th St & Allegheny Ave, Philadelphia 32, Pa.
Copes-Vulcan Div, Continental Foundry & Machine Co, Erie, Pa.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Cutler-Hammer Inc, 294 N 12th St, Milwaukee 1, Wis.
Darling Valve & Mfg Co, Foot of Walnut St, Williamsport, Pa.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Defender Instrument & Regulator Co, 815 Clark Ave, St Louis 2, Mo.
Eclipse Fuel Engrg Co, 1029 Buchanan St, Rockford, Ill.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Farris Engrg Corp, 400 Commercial Ave, Palisades Park, N. J.
Fischer & Porter Co, 500 County Line Rd, Hatboro, Pa.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Grinnell Co, 260 W Exchange St, Providence 1, R. I.
Hammel-Dahl Co, 243 Richmond St, Providence 3, R. I.
Hauck Mfg Co, 136 10th St, Brooklyn 15, N. Y.
Hills-McCanna Co, 2456 W Nelson St, Chicago 18, Ill.
Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.
Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Jenkins Conveyors Co, 614 Central Ave, East Orange, N. J.
Johnson Service Co, 507 E Michigan St, Milwaukee 2, Wis.
Keckley, O C, Co, 400 W Madison St, Chicago 6, Ill.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Ludlow Valve Mfg Co Inc, Troy N. Y.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
M & H Valve & Fittings Co, P O Box 909, Anniston, Ala.
Mason-Neilan Regulator Co, 1186 Adams St, Boston 24, Mass.
Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave S, Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Natural Gas Equip Inc, 190 E Glenarm St, Pasadena 2, Calif.
North American Mfg Co, 4455 E 71st St, Cleveland 5, Ohio
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Paul Valve Corp, 683 Third Ave, New York 17, N. Y.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
Pratt, Henry, Co, 2222 S Halsted, Chicago 8, Ill.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Republic Flow Meters Co, 2222 Diversey Pkwy, Chicago 47, Ill.
Rockwell, W S Co, 200 Eliot St, Fairfield, Conn.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Schade Valve & Mfg Co, 2527 N Bodine St, Phila 33, Pa.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, 614 Frelinghuysen Ave, Newark 5, N. J.
Taylor Instrument Cos, 95 Ames St, Rochester, N. Y.
Vapor Heating Corp, 80 E Jackson Blvd, Chicago 4, Ill.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Waters Governor Co, 53 Waters Ave, Everett 49, Mass.
Webster, Warren & Co, 1658 Federal St, Camden, N. J.

VALVES, NEEDLE

Alloy Steel Products Co, 1300 W Elizabeth St, Linden, N. J.
Associated Valve & Engrg Co, 1150 W Marquette Rd, Chicago 21, Ill.
Blackhawk Mfg Co, 5325 Rogers St, Milwaukee 1, Wis.
Cooper Alloy Foundry Co, Bloy St & Ramsay Ave, Hillside, N. J.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Darling Valve & Mfg Co, Foot Walnut St, Williamsport, Pa.
Dockson Corp, 3839 Wabash Ave, Detroit 8, Mich.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
Henry Valve Co, 3215 North Ave, Melrose Park, Ill.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.
Jareckl Valve Div, 1150 N Peoria, Tulsa, Okla.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Lunkenheimer Co, P O Box 360, Annex Station, Cincinnati 14, Ohio
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Marsh, Jas P Corp, Skokie, Ill.
Nathan Mfg Co, 416 E 106th St, New York 29, N. Y.
Nugent, Wm W, & Co, Inc, 402 N Hermitage Ave, Chicago 22, Ill.
Ohio Brass Co, 380 N Main St, Mansfield 7, Ohio
Ohio Injector Co, 108 Pine St, Wadsworth, Ohio
Oil-Rite Corp, 2378 Waldo Blvd, Manitowoc, Wis.
Pneu-Trol Devices, Inc, 1436 N Keating Ave, Chicago 51, Ill.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.
Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Strong, Carlisle & Hammond Co, 1392 W 3rd St, Cleveland 13, Ohio
Thornhill-Craver Co Inc, 1111 Lockwood Dr, Houston 1, Texas
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio

VALVES, NON-RETURN

Buell Engrg Co, Inc, 70 Pine St, New York 5, N. Y.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.
Davis Regulator Co, 2540 S Washtenaw Ave, Chicago 8, Ill.
Edward Valves Inc, 1200 W 145th St, East Chicago, Ind.
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Foster Engrg Co, 835 Lehigh Ave, Union, N. J.
Golden-Anderson Valve Specialty Co, Keenan Bldg, Pittsburgh 22, Pa.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Keckley, O C, Co, 400 W Madison St, Chicago, Ill.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Kieley & Mueller Inc, 2013 43rd St, North Bergen, N. J.
Lunkenheimer Co, P O Box 360 Annex Station, Cincinnati 14, Ohio
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
Pneu-Trol Devices Inc, 1436 N Keating Ave, Chicago 51, Ill.
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.
Ruggles-Klingemann Mfg Co, Foster Court, Salem, Mass.
Schutte & Koerting Co, Cornwells Heights, Bucks County, Pa.

Look for the noun in the product listing, for example:

Valves, Globe

not

Globe Valves

Stockham Valves & Fittings, 4000 10th Ave, Birmingham, Ala.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Williams, D T, Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio
Zurn, J A, Mfg Co, 1801 Pittsburgh Ave, Erie, Pa.

VALVES, PLUG

American Car & Foundry Co, 30 Church St, N. Y. 7, N. Y.
Ampco Metal, Inc, 1701 S 38th St, Milwaukee 46, Wis.
Cameron Iron Works, P O Box 1212, Houston, Texas
Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
De Zurick Shower Co, Sartell, Minn.
Duriron Co, Inc, Dayton 1, Ohio
Fairbanks Co, 393 Lafayette St, New York 3, N. Y.
Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.
Jenkins Bros, 100 Park Ave, New York 17, N. Y.
Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Klingerit Inc, 16 Hudson St, New York 13, N. Y.
Ludlow Valve Mfg Co Inc, Troy, N. Y.
McAlear Mfg Co, 1901 S Western Ave, Chicago 8, Ill.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas
Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.
Powell, Wm, Co, 2525 Spring Grove Ave, Cincinnati 22, Ohio
R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.
Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh, Pa.
Smith, S Morgan, Co, 500 Lincoln St, York, Pa.
Tri-Clover Machine Co, 2809 60th St, Kenosha, Wis.
Vogt, Henry, Machine Co, 1000 W Ormsby St, Louisville 10, Ky.
Walworth Co, 60 E 42nd St, New York 17, N. Y.
Watson Stillman Co, 108 Aldene Rd, Roselle, N. J.
Welsbach Corp, 1500 Walnut St, Philadelphia 2, Pa.
Williams, D T Valve Co, Div Schaible Co, 1086 Summer St, Cincinnati, Ohio

VALVES, PUMP AND COMPRESSOR

Anchor Packing Co, 401 N Broad St, Philadelphia 8, Pa.
Atlas Valve Co, 280-84 South St, Newark 5, N. J.
Birch Mfg Co, 1521-23 Sedgwick St, Chicago 10, Ill.
Cash, A W, Co, Box 551, Decatur, Ill.
Durabla Mfg Co, 114 Liberty St, New York 6, N. Y.
Farris Engrg Co, 400 Commercial Ave, Palisades Park, N. J.
General Controls Co, Box 3517 Grand Central Sta, Glendale 1, Calif.
Hill Pump Valve Co, 2728 Elston Ave, Chicago 47, Ill.

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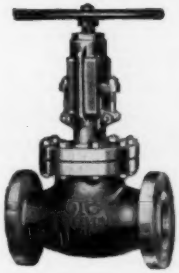

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5902 Carnegie Ave. • Cleveland 3, Ohio

VIBRATORS, BIN, CAR, CHUTE AND HOPPER

Beaumont Birch Co, 1505 Race St, Philadelphia 2, Pa.
Fairfield Engrg Co, 307 Barnhart St, Marion, Ohio
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
National Conveyor & Supply Co, 346 N Harding Ave, Chicago 24, Ill.
Robins Conveyors Div, Hewitt-Robins Inc, 270 Passaic Ave, Passaic, N. J.
Syntron Co, 492 Lexington, Homer City, Pa.

VOLTMETERS, INDICATING

Beckman Instruments Inc, 820 Mission St, South Pasadena, Calif.
Burlington Instrument Co, 203 N 3rd St, Burlington, Iowa
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Hanson-Van Winkle-Munning Co, Church St, Matawan, N. J.
Marion Electrical Instrument Co, Stark St Gate, Manchester, N. H.
Pyramid Instrument Corp, 630 Merrick Rd, Lynbrook, N. Y.
Roller-Smith, 1756 W Market St, Bethlehem, Pa.
Sensitive Research Instrument Co, 9-11 Elm Ave, Mount Vernon, N. Y.
Simpson Electric Co, 5200 W Kinzie, Chicago 44, Ill.
Sticht, Herman H Co, 27 Park Pl, New York 7, N. Y.
U S Gauge Div, American Machine & Metals Inc, Sellersville, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

VOLTMETERS, RECORDING

Bristol Co, Waterbury 20, Conn.
Esterline-Angus Co, 1201 Main St, Indianapolis 6, Ind.
Foxboro Co, 38 Neponset Ave, Foxboro, Mass.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, N. Y. 17, N. Y.
Hanson-Van Winkle-Munning Co, Church St, Matawan, N. J.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Aves, Philadelphia 44, Pa.
Sticht, Herman H Co, 27 Park Pl, New York 7, N. Y.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

WALLS, FURNACE, AIR-COOLED

Allen-Sherman-Hoff Co, 259 E Lancaster Ave, Wynnewood, Pa.
American Arch Co Inc, 60 E 42nd St, New York 17, N. Y.
Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 2, Mich.
Carborundum Co, Perth Amboy, N. J.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Detrick, M H Co, 111 W Washington St, Chicago 2, Ill.
Green, A P, Fire Brick Co, Mexico, Mo.
Kennedy Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Reintjes, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Waite Gravity Lock Refractories, 111 Westminster St, Providence 3, R. I.

WALLS, FURNACE, SUSPENDED

Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Bigelow Liptak Corp, 2550 W Grand Blvd, Detroit 2, Mich.
Chicago Fire Brick Co, 1467 Elston Ave, Chicago 22, Ill.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crotty Mfg Co, 133-15 35th Ave, Flushing, N. Y.
Detrick M H Co, 111 W Washington St, Chicago 2, Ill.
Green, A P, Fire Brick Co, Mexico, Mo.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Norton Co, 1 New Bond St, Worcester 6, Mass.
Palmer Mfg Corp, 21st Ave at Fillmore St, Phoenix, Ariz.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Reintjes, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Waite Gravity Lock Refractories, 111 Westminster St, Providence 3, R. I.

WALLS, FURNACE, WATER-COOLED

Babcock & Wilcox Co, 161 E 42nd St, New York 17, N. Y.
Bernitz Furnace Appliance Co, 89 Broad St, Boston 10, Mass.
Bigelow Co, Lloyd & River Sts, New Haven 13, Conn.
Carborundum Co, Perth Amboy, N. J.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Crotty Mfg Corp, 133-15 35th Ave, Flushing, N. Y.
Detrick, M H, Co, 111 Washington St, Chicago 2, Ill.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Delaware
Erie City Iron Wks, 1422 East Ave, Erie, Pa.
Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.
Kennedy Van Saun Mfg & Engrg Corp, 2 Park Ave, N. Y. 16, N. Y.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Pilbrico Jointless Firebrick Co, 1800 Kingsbury St, Chicago 14, Ill.
Power Plant Deficiency Co, P O Box 592, Indianapolis 4, Ind.
Quigley Co Inc, 527 Fifth Ave, New York 17, N. Y.
Ramtite, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Riley Stoker Corp, 9 Neponset St, Worcester, Mass.
Rust Engrg Co, Rust Bldg, Pittsburgh 19, Pa.
Springfield Boiler Co, 1901 E Capitol Ave, Springfield, Ill.
Waite Gravity Lock Refractories, 111 Westminster St, Providence 3, R. I.
Wickes Boiler Co, 512 N Water St, Saginaw, Mich.

WASHERS, AIR

Air & Refrigeration Corp, 475 Fifth Ave, New York 17, N. Y.
American Blower Corp, Detroit 32, Mich.
Bahnson Co, 1001 S Marshall St, Winston-Salem, N. C.
Carr, Clifford H Co, 614 W 67th St, Kansas City 5, Mo.
Buffalo Forge Co, 488 Broadway, Buffalo 5, N. Y.
Carrier Corp, 300 S Geddes St, Syracuse 1, N. Y.
Clarage Fan Co, North & Porter Sts, Kalamazoo 16, Mich.
Fluor Corp, Ltd. 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Hydro-Ash Corp, 1408 W Harrison St, Chicago 7, Ill.
Marlo Coil Co, 6135 Manchester, St Louis 10, Mo.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Newcomb-Detroit Co, 5741 Russell St, Detroit 11, Mich.
Peabody Engrg Corp, 580 Fifth Ave, New York 9, N. Y.
Quaker Rubber Div, H K Porter Co, 4915 Comly St, Phila 24, Pa.
Ross J O Engrg Corp, 350 Madison Ave, New York 17, N. Y.
Spray Engrg Co, 114 Central St, Somerville 45, Mass.
Surface Combustion Corp, 2375 Dorr St, Toledo 1, Ohio
Trane Co, LaCrosse, Wis.
York Corp, York, Pa.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.
Westinghouse Elec Corp, Sturtevant Div, Hyde Park, Boston 36, Mass.

WATER COLUMNS

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Ernst Water Column & Gage Co, 250 S Livingston Ave, Livingston, N. J.
Huyette, Paul B, Co Inc, 401 N Broad St, Philadelphia 8, Pa.
Reliance Gauge Column Co, 5902 Carnegie Ave, Cleveland 3, Ohio
Stets Co, 1440 Broadway, New York 18, N. Y.
Williams Gauge Co, 2055 Pennsylvania Ave, Pittsburgh 33, Pa.
Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

WATER TREATMENT, BOILER, INTERNAL

Acme Industrial Compounds Corp, 625 S Goodman St, Rochester 7, N. Y.
Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
Allen-Murray Corp, 131 E 23rd St, New York 10, N. Y.
Alladdin Labs Inc, 68 William St, New York 5, N. Y.
Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.
American Cyanamid Corp, 30 Rockefeller Plaza, N. Y. 20, N. Y.
American K A T Corp, Garwood, N. J.
American Locomotive Co, Schenectady 5, N. Y.
American Sand-Banum Co Inc, 9 Rockefeller Plaza, N. Y. 20, N. Y.
Aquatrol, Inc, P O Box 12233, Houston, Texas
Betz, W H & L D, Gillingham & Worth Sts, Philadelphia 24, Pa.
Bird-Archer Co, 4337 N American St, Philadelphia 40, Pa.
Buromin Co, Hagan Bldg, Pittsburgh 30, Pa.
Butler Engrg Co, 2612 Rousseau St, New Orleans, La.
Cochrane Corp, 17th & Allegheny Ave, Philadelphia 32, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Continental Asbestos & Refining Corp, 1 Madison Ave, N. Y. 10, N. Y.
Dacar Chemical Prods Inc, 1007 McCartney St, Pittsburgh 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dominion Chemical Co, Inc, 11 W 42nd St, Dept A, N. Y. 18, N. Y.
Drew, E F & Co, 15 E 26th St, New York 10, N. Y.
Electromatic Water Treatment Inc, 475 Fifth Ave, N. Y. 17, N. Y.
Elgin Softener Corp, 130 N Grove Ave, Elgin, Ill.
Feedwaters, Inc, 140 Cedar St, New York 6, N. Y.
Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.
Haering, D W & Co, P O Box 6037, Harlandale Sta, San Antonio, Texas
Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.
Hall Laboratories, Inc, Hagan Bldg, Pittsburgh, Pa.
Heller Laboratories Inc, 196 Morgan St, Jersey City, N. J.
Hungerford & Terry, Inc, 226 Atlantic Ave, Clayton, N. J.
Illinois Water Treatment Co, 883 Cedar St, Rockford, Ill.
Infilco Inc, P O Box 5033, Tucson, Ariz.
Kelite Products Inc, Box 2917 Terminal Annex, Los Angeles 54, Calif.
LaMotte Chemical Products Co, Towson, Baltimore 4, Md.

Belco
WATER CONDITIONING
...and allied equipment for the Power Field

WATER SOFTENERS
Hot Lime Soda
Beleolite
Gravity and Pressure Types
Automatic and Manual

FILTRATION EQUIPMENT
Gravity and Pressure Filters
Automatic and Manual Filters
Siliceous and Non-Siliceous Filters
Iron, Oil, Taste, Odor and Color Removal Filters

DIATOMACEOUS EARTH FILTERS

COAGULATION EQUIPMENT
Slow and Rapid Mix Agitators (Adjustable variable speed)
Settling Tanks
Sludge Removers

ELECTRICAL EQUIPMENT
400 Cycle Generators
Magnetic variable speed motor drives —(no vacuum tubes required)
AC Motors — DC Motors
Generating Sets
Motor Generators

SPECIAL EQUIPMENT
De-ionized (Equivalent to Distilled) Water Equipment
Silica Removal Equipment
Boiler Feed Water Heaters
Deaerators
Degasifiers
Chemical Dry Feeders
Chemical Pressure Feeders
Oil Separators (Refining process type)

BELCO INDUSTRIAL EQUIPMENT DIVISION
PATERSON 3, NEW JERSEY

For additional information about manufacturers' products

McKays Co, 473 Cleveland Ave N, St. Paul, Minn.
Madden, P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Magnus Chemical Co Inc, South Ave, Garwood, N. J.
Maxfal Chemical Co, 33 W 42nd St, New York 18, N. Y.
National Gypsum Co, 1325 Delaware Ave, Buffalo 2, N. Y.
Nokem Co, 4030 Chouteau Ave, St Louis 19, Mo.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Penolin Co Inc, 10 E 40th St, New York 16, N. Y.
Polyphase Chem Services, Inc, 150 Nassau St, New York 38, N. Y.
Portland Shingle Co, Chemical Div, 9038 N Denver Ave, Portland 17, Ore.
Refinite Corp, Box 1312 Omaha, Neb.
Sawrite Engrg Co, 14th & Garden Sts, Hoboken, N. J.
Shum Co, 4701 W Electric Ave, Milwaukee 14, Wis.
Squires C E Co, 18502 Syracuse Ave, Cleveland 10, Ohio
Standard Chemicals, Inc, 36 Summer St, Natick, Mass.
Sterling Water Treatment Co, 1920 W 77th St, Cleveland 2, Ohio
Sudbury Laboratory, South Sudbury, Mass.
Warren Refining & Chem Co, 750 Prospect Ave, Cleveland, Ohio
Water Treatment Co of America, 1159 Hodgkiss St, Pittsburgh, Pa.
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Worthington Corp, Harrison, N. J.
Wright Chemical Corp, 617 W Lake St, Chicago 6, Ill.
Xzit Chemical Co, 158 - 14th St, Hoboken, N. J.
(See also Chlorinators, Softeners, Clarifiers, Water Filters, Water)

WELDING AND CUTTING OUTFITS, OXYACETYLENE

Air Reduction Co, 60 E 42nd St, New York 17, N. Y.
Dockson Corp, 3839 Wabash Ave, Detroit 8, Mich.
Eutectic Welding Alloys Corp, 40-40 172nd St, Flushing, N. Y.
Linde Air Products Co, 30 E 42nd St, New York 17, N. Y.
Marquette Mfg Co, 307 E Hennepin Ave, Minneapolis 14, Minn.
Sheppard, R H, Co, Inc, 101 Philadelphia Ave, Hanover, Pa.

WELDING MACHINES, ELECTRIC

Air Reduction Co, 60 E 42nd St, New York 17, N. Y.
DoAll Co, Des Plaines, Ill.
Eisler Engrg Co Inc, 757 S 13th St, Newark 3, N. J.
Eutectic Welding Alloys Corp, 40-40 172nd St, Flushing, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Harnischfeger Corp, 4400 W National Ave, Milwaukee 14, Wis.
Hobart Brothers Co, Hobart Square, Troy 1, Ohio
Lincoln Elec Co, 22801 St. Clair Ave, Cleveland 17, Ohio
Linde Air Products Co, 30 E 42nd St, New York 17, N. Y.
Marquette Mfg Co, 307 E Hennepin Ave, Minneapolis 14, Minn.
Metal & Thermal Corp, 100 E 42nd St, New York 18, N. Y.
Metallizing Co of America, 3520 W Carroll Ave, Chicago 24, Ill.
Smith, A O, Corp, 3533 N 27th St, Milwaukee 1, Wis.
Westinghouse Electric Corp, P O Box 868, Pittsburgh 30, Pa.

WHEELS, SPROCKET

Atlantic Gear Works, 200 Lafayette St, New York 12, N. Y.
Babbitt Steam Specialty Co, 55 S Water St, New Bedford, Mass.
Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Boston Gear Wks, 14 Hayward St, Quincy 71, Mass.
Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.
Hunt, Rodney, Machine Co, Orange, Mass.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Holmes, Robert, & Bros, Danville, Ill.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
McNally Pittsburg Mfg Corp, Pittsburg, Kansas
Medart Co, 100 Potomac St, St. Louis 18, Mo.
Ohio Gear Co, 1329 E 169th St, Cleveland 10, Ohio
Palmer-Bee Co, 1710 Poland Ave, Detroit 12, Mich.
Union Chain & Mfg Co, Edgewater Ave, Sandusky, Ohio

WINCHES, ELECTRIC, HAND

Bartlett, C O & Snow Co, 6200 Harvard Ave, Cleveland 5, Ohio
Detroit Hoist & Machine Co, 8254 Morrow St, Detroit 11, Mich.
Link-Belt Co, 301 W Pershing Rd, Chicago 9, Ill.
Robbins & Myers Inc, 1345 Lagonda Ave, Springfield, Ohio
Shepard Niles Crane & Hoist Corp, Schuyler Ave, Montour Falls, N. Y.
Silent Hoist & Crane Co, 841 63rd St, Brooklyn 20, N. Y.
Stephens-Adamson Mfg Co, 5 Ridgeway, Aurora, Ill.
Wheeler, C H, Mfg Co, Lehigh & Sedgley Aves, Philadelphia 32, Pa.
Yale & Towne Mfg Co, Roosevelt Blvd, Philadelphia 15, Pa.

WIRE AND CABLE, ELECTRIC, 600 V AND UNDER

Aluminum Co of America, Dept 11, 670 Gulf Bldg, Pittsburgh 19, Pa.
American Steel & Wire Div, Rockefeller Bldg, Cleveland 13, Ohio
Anaconda Wire & Cable Co, 25 Broadway, New York 4, N. Y.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Federal Telephone & Radio Corp, 100 Kingsland Rd, Clifton, N. J.
General Cable Corp, 420 Lexington Ave, New York 17, N. Y.
General Electric Co, Construction Materials Div, 1285 Boston Ave, Bridgeport 2, Conn.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh, Pa.
Okonite Co, Canal St, Passaic, N. J.
Rockbestos Products Corp, 285 Nicoll St, New Haven 4, Conn.
Roebling's, John A Sons Co, Trenton 2, N. J.
Rome Cable Corp, Ridge St, Rome, N. Y.
Simplex Wire & Cable Co, 79 Sidney St, Cambridge 39, Mass.
Tennessee Coal Iron Div, U S Steel Co, Fairfield, Ala.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

WIRE AND CABLE, ELECTRIC, OVER 600 V

Aluminum Co of America, Dept 11, 670 Gulf Bldg, Pittsburgh 19, Pa.
American Steel & Wire Div, Rockefeller Bldg, Cleveland 13, Ohio
Anaconda Wire & Cable Co, 25 Broadway, New York 4, N. Y.
Chase Brass & Copper Co, 236 Grand St, Waterbury 20, Conn.
Federal Telephone & Radio Corp, 100 Kingsland Rd, Clifton, N. J.
General Cable Corp, 420 Lexington Ave, New York 17, N. Y.
General Electric Co, Apparatus Sales Div, Schenectady 5, N. Y.
General Electric Co, Construction Materials Div, 1285 Boston Ave, Bridgeport, Conn.
Graybar Electric Co Inc, 420 Lexington Ave, New York 17, N. Y.
Line Material Co, 700 W Michigan St, Milwaukee, Wis.
National Electric Products Corp, Chamber of Commerce Bldg, Pittsburgh, Pa.
Okonite Co, Canal St, Passaic, N. J.
Rockbestos Products Corp, 285 Nicoll St, New Haven 4, Conn.
Roebling's, John A Sons Co, Trenton 2, N. J.
Rome Cable Corp, Ridge St, Rome, N. Y.
Simplex Wire & Cable Co, 79 Sidney St, Cambridge 39, Mass.
Tennessee Coal Iron Div, U S Steel Co, Fairfield, Ala.
United States Rubber Co, 1230 Ave of the Americas, New York 20, N. Y.

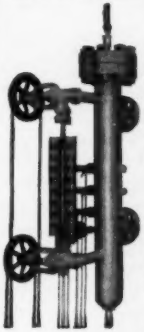
ZEOLITES

(See Softeners, Ion Exchange)

YARWAY
WATER COLUMNS & GAGES

Widely used by public utilities, industrial plants and institutions. Sold as complete units or separate columns and gages.

Floatless Hi-Lo Alarm in column depends for action on displacement of balanced solid weights. Whenever high or low water level destroys balance of weights, valve in top of column opens, admitting steam to alarm whistle. Hi-Lo Alarm Columns made for all pressures up to 1500 lbs., no-alarm columns for pressures to 2500 lbs.



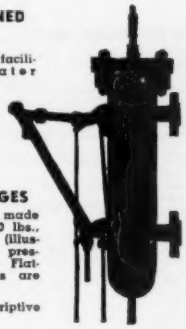
SESURE-INCLINED GAGE

(shown at right) facilitates reading water level from any point on boiler room floor, even directly beneath. Made with round glass for pressures up to 400 lbs.

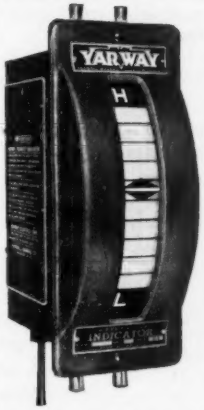
VERTICAL GAGES

with round glass made for pressure to 400 lbs., with flat glass (illustrated at left) for pressures to 2500 lbs. Flat-glass steel inserts are mica protected.

Send for descriptive Bulletin WG-1811.



YARWAY REMOTE
LIQUID LEVEL INDICATORS



Yarway's Remote Liquid Level Indicator brings overhead gage readings right down to eye level, on the instrument panel or other convenient place. It gives instant, accurate boiler water level indication on a brilliantly lighted red and green dial.

The Yarway Remote Liquid Level Indicator is accurate because IT'S OPERATED BY THE BOILER WATER ITSELF —by the pressure differential between a constant head of water and the varying head in the boiler drum . . . a unique indicating mechanism which is never under pressure. Action is instant, constant, frictionless. THERE ARE NO STUFFING BOXES. Suitable for all pressures up to 2500 psi.

Moderately priced and easily installed on new or existing equipment. Thousands already in use, not only to indicate boiler and feed heater water levels, but also other liquid levels and superheater pressure differential.

For complete description, write for Bulletin WG-1823.

For description of Yarway HI-LO-GRAPH Liquid Level Recorder, write for Bulletin WG-1830

See other Yarway Advertisements on pages 74, 78, 105, 108

YARNALL-WARING COMPANY
100 MERMAID AVE., PHILA. 18, PA.

POWER SERVICE GUIDE

DEALERS, EQUIPMENT

(See Classified Section of This Issue)

INSURANCE, BOILER AND POWER EQUIPMENT

Columbia Casualty Co, 1 Park Ave, New York 16, N. Y.
Hartford Steam Boiler Inspection & Insurance Co, 56 Prospect St, Hartford 2, Conn.
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
Mutual Boiler & Machy Insurance Co, 60 Batermarch St, Boston 10, Mass
Ocean Accident & Guarantee Corp Ltd, 1 Park Ave, New York 16, N. Y.
U S Gasket Co, 602 N 10th St, Camden, N. J.

REPAIR WORK, BOILER

Bigelow Co, Lloyd & River Sts, New Haven 13, Conn.
Bros, Wm Boiler & Mfg Co, 1057 10th Ave, SE, Minneapolis, Minn.
Carolina Refractories Co, Hartsville, S. C.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Edge Moor Iron Wks Inc, 100 Edge Moor St, Edge Moor, Del.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
McGraw, F H & Co, 51 E 42nd St, New York 17, N. Y.
Mexico Refractories Co, Better Refractories Bldg, Mexico, Mo.
Nooter Corp, 1400 S 2nd St, St. Louis 4, Mo.
Ramtite Co, 2549 W 18th St, Chicago 8, Ill.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Reintjes, Geo P, Co, 2517 Jefferson St, Kansas City, Mo.
Sexauer, J A, Mfg Co, 2503 3rd Ave, New York 51, N. Y.
U S Gasket Co, 602 N 10th St, Camden, N. J.
Waite Construction Co, 111 Westminster St, Providence 3, R. I.

REPAIR WORK, CHIMNEYS

American Chimney Corp, 147 4th Ave, New York 3, N. Y.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Custodis, Alphons, Chimney Const Co, 25 Broadway, N. Y., 4, N. Y.
Gunite Concrete & Construction Co, 1301 Woodswether Rd, Kansas City 6, Mo.
Kellogg, M W, Co, 225 Broadway, New York 7, N. Y.
McGraw, F H & Co, 51 E 42nd St, New York 17, N. Y.

REPAIR WORK, CONDENSER

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Heat Exchange Engrg Inc, 512 Madison Ave, Hoboken, N. J.
Heilman Boiler Wks, 132 Linden St, Allentown, Pa.
Henszey Co, 202½ Water St, Watertown, Wis.
Kellogg, M N Co, 225 Broadway, New York 7, N. Y.
McGraw, F H & Co, 51 E 42nd St, New York 17, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Nooter Corp, 1400 S 2nd St, St. Louis 4, Mo.

REPAIR WORK, ENGINE

Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Filer & Stowell Co, 147 E Becher St, Milwaukee 7, Wis.
Sims Pump Valve Co, Inc, 145 Hudson St, New York 13, N. Y.
Skinner Engine Co, 337 N 12th St, Erie, Pa.
U S Gasket Co, 602 N 19th St, Camden, N. J.

SCHOOLS, POWER CORRESPONDENCE

Hays School of Combustion, 430 N Michigan Ave, Chicago, Ill.
International Correspondence Schools, Scranton 9, Pa.
U S Gasket Co, 602 N 10th St, Camden, N. J.

SERVICES, CHEMICAL CLEANING, BOILERS, HEAT EXCHANGE EQUIP, ETC.

Brooks Chemicals Inc, 3304 E 87th St, Cleveland, Ohio
Dowell, Inc, P O Box 536, Tulsa 1, Okla.
Kennedy Van Saun Mfg & Engrg Corp, 2 Park Ave, New York 16, N. Y.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
Patterson-Kelley Co, Inc, 129 Burson St, East Stroudsburg, Pa.
Standard Chemicals, Inc, 36 Summer St, Natick, Mass.

SERVICES, CHEMICAL SCALE REMOVAL

Acme Industrial Compounds Corp, 625 S Goodman St, Rochester 7, N. Y.
Alladdin Laboratories Inc, 68 William St, New York 5, N. Y.
American K A T Corp, Garwood, N. J.
Aquadyne Corp, 441 Lexington Ave, New York 17, N. Y.
Bird-Archer Co, 4337 N American St, Phila 40, Pa.
Condenser Service & Engrg Co, Inc, 89 River St, Hoboken, N. J.
Dacar Chemical Prods, Inc, 1007 McCartney St, Pitts 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Dowell Inc, P O Box 536, Tulsa, Okla.
Pennsylvania Salt Mfg Co, 1000 Widener Bldg, Phila, Pa.
Saverite Engineering Co, 14th & Garden Sts, Hoboken, N. J.
Suhm Co, Inc, 4701 W Electric Ave, Milwaukee 14, Wis.
Sumco Engrg Co, 141 Centre St, Brooklyn 31, N. Y.
Wright Chemical Corp, 617 W Lake St, Chicago 6, Ill.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

SERVICES, PLATING, POROUS CHROMIUM FOR LINERS, ETC.

Van Der Horst Corp of America, Olean, N. Y.
Spar-Tan Engrg Co, 2445 Enterprise St, Los Angeles, Calif.

SERVICES, CONSULTING, ENGINEERING

Austin Company, 19 Rector St, New York, N. Y.
Baker & Spencer, Inc, 27 William St, New York, N. Y.
Beecher & Sandwell, H W Securities Bldg, Seattle, Washington
Black & Veatch, 4706 Broadway, Kansas City, Mo.
Boddy-Benjamin Associates, Inc, 2210 Park Ave, Detroit, Mich.
Brown Engrg Co, 322 K P Bldg, Des Moines 9, Iowa
Buell & Winter, 508 Insurance Exchange Bldg, Sioux City, Iowa
Burns & McDonnell Engrg Co, 95th & Troost Ave, Kansas City, Mo.
Burns & Roe, 233 Broadway, New York, N. Y.
Byrne Associates, Inc, 50 Broadway, New York, N. Y.
Carlton, Wm H & Associates, 15 E 8th St, Cincinnati 2, Ohio
Commercial Testing & Engrg Co, 307 N Michigan Ave, Chicago 1, Ill.
Commonwealth Associates, Inc, 212 W Michigan Ave, Jackson, Mich.
Cummins & Barnard, State Savings Bank Bldg, Ann Arbor, Mich.
Day & Zimmerman, Inc, Packard Bldg, Philadelphia, Pa.
Drazen & Associates, 8135 Forsythe Blvd, Clayton, St. Louis 5, Mo.
Ebasco Services, 2 Rector St, New York 6, N. Y.
Egli & Gompft, 425 St Paul Place, Baltimore 2, Md.
Electric Advisers, Inc, 70 Pine St, New York, N. Y.
Ferguson, H K Co, 1783 E 11th St, Cleveland, Ohio
Ferguson, H S & Co, 200 Fifth Ave, New York 10, N. Y.
Ford, Bacon & Davis, 39 Broadway, New York, N. Y.
Gates, Moe, Weiss & Papenthein, 611 N Broadway, Milwaukee, Wis.
Gibbs & Hill, Inc, Penn Station, New York 1, N. Y.
Gilbert Associates, 412 Washington St, Reading, Pa.
Graver Construction Co, 332 S Michigan Ave, Chicago, Ill.
Greene, Lockwood, 30 Rockefeller Plaza, New York, N. Y.
Hardy, George F & Son, 441 Lexington Ave, New York 17, N. Y.
Harza Engineering Co, 400 W Madison St, Chicago, Ill.
Helmick, Edeskuty & Lutz, 412 Essex Bldg, Minneapolis, Minn.
Holway, W R & Associates, 302 E 18th St, Tulsa, Okla.
Jackson & Moreland, Park Sq Bldg, Boston 10, Mass.
Jenks & Ballou, 2600 Industrial Trust Bldg, Providence, R. I.
Kahn, Albert, Inc, New Center Bldg, Detroit, Mich.
Kegarise-Cronk Engrg Corp, 334 E Main St, Johnson City, Tenn.
Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, New York 16, N. Y.
Kuljian Corp, The, 1200 N Broad St, Philadelphia 21, Pa.
Laramore & Douglass Inc, 79 E Adams St, Chicago 3, Ill.
Little, Arthur D, Inc, 30 Memorial Dr, Cambridge 42, Mass.
Loftus Corp, P F, Oliver Bldg, Pittsburgh, Pa.
Lutz & May, 819 Finance Bldg, 1009 Baltimore Ave, Kansas City, Mo.
Main, Inc, Chas T, 80 Federal St, Boston 10, Mass.
Moore, C C & Co, 601 W 5th St, Los Angeles, Calif.
Moyer, R E Associates, 10th & Union Sts, Catasauqua, Pa.
Pfeiffer & Schultz, 702 Wesley Temple Bldg, Minneapolis 4, Minn.
Pioneer Service & Engrg Co, 231 S La Salle St, Chicago 4, Ill.
Pritchard, J F & Co, 2200 Fidelity Bldg, Kansas City 6, Mo.
Public Utility Engrg & Service Corp, 231 S La Salle St, Chicago 4, Ill.
Reynolds, Smith & Hills, 10 S Laura St, Jacksonville, Florida
Robert & Co, Bona Allen Bldg, Atlanta, Ga.
Royalton Co, Gasport, N. Y.
Rust Engrg Co, Clark Bldg, Pittsburgh, Pa.
Sanderson & Porter, 52 Williams St, New York, N. Y.
Sargent & Lundy, 140 S Dearborn St, Chicago, Ill.
Schmidt, Gardner & Erickson, 104 S Michigan, Chicago, Ill.
Sill & Warrington, 79 Milk St, Boston, Mass.
Simons, H A, Holden Bldg, Vancouver, B. C., Canada
Sirrine, J E Co, 215 S Main St, Greenville, S. C.
Smith, Hinchman & Grylls, Marquette Bldg, Detroit, Michigan
Stadler-Hurter Co, 609 Drummond Bldg, Montreal 2, Que, Canada
Standard Chemicals, Inc, 36 Summer St, Natick, Mass.
Stanley Engrg Co, Central State Bk Bldg, Muscatine, Iowa
Stevens, W O, 856 Beatty St, Vancouver, B. C., Canada
Stone & Webster Co, 49 Federal St, Boston, Mass.
Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
United Engineers & Constructors Inc, 1401 Arch St, Philadelphia 4, Pa.
Velocity Steam Production Engrg, Inc, 38 S Dearborn, Chicago, Ill.
Water Treatment Co of America, 1159 Hodgkiss St, Pittsburgh 12, Pa.
Whitman Requardt & Associates, 1304 St Paul, Baltimore, Md.
Wearn, Vreeland, Carlson & Sweatt, 43 Exchange Pl, New York, N. Y.
Westcott & Mapes, 139 Orange St, New Haven, Conn.
Wilson Co, H M, 18 & Brandywine Sts, Philadelphia 30, Pa.
Wood, A C & Associates, Stock Exchange Bldg, Philadelphia, Pa.

SERVICES, CONTRACTING, CONSTRUCTING

Austin Co, 16112 Euclid Ave, Cleveland 12, Ohio
Carolina Refractories Co, Hartsville, S. C.
Centrifix Corp, 3608 Payne St, Cleveland 14, Ohio
Dravo Corp, Dravo Bldg, Pittsburgh 22, Pa.
Flexrock Co, 3677 Gilbert St, Phila 4, Pa.
Fluor Corp Ltd, 2500 S Atlantic Blvd, Los Angeles 22, Calif.
Gronemeyer Corp, Ft of E 7th St, Wilmington 99, Delaware
Gunite Concrete & Construction Co, 1301 Woodswether Rd, Kansas City 6, Mo.
Jackson & Moreland, Park Square Bldg, Boston 10, Mass.
Kuljian Corp, The, 1200 N Broad St, Philadelphia 21, Pa.
Kellogg, M W Co, 225 Broadway, New York 7, N. Y.
McGraw, F H & Co, 51 E 42nd St, New York 17, N. Y.
Main, C T, Inc, 80 Federal St, Boston, Mass.
Pioneer Service & Engrg Co, 231 S LaSalle St, Chicago 4, Ill.
Pritchard, J F & Co, 908 Grand Ave, Kansas City 6, Mo.
Sanderson & Porter, 52 Williams St, New York, N. Y.
Stone & Webster Engrg Co, 49 Federal St, Boston, Mass.
Thomas, H Emerson & Associates, P O Box 270, Westfield, N. J.
Turner & Haws Engrg Co, 87 Gardner St, Boston 32, Mass.
Turner Construction Co, 420 Lexington Bldg, New York 7, N. Y.
Waite Construction Co, 111 Westminster St, Providence 3, R. I.
White, J G, Engrg Corp, 80 Broad St, New York 4, N. Y.
Wilson, H M Co, 18th & Brandywine Sts, Phila 30, Pa.

USED EQUIPMENT

(See Searchlight Section of this Issue)

WATER TREATMENT, CONSULTATION AND CONTROL

Alco Products Div, American Locomotive Co, Dunkirk, N. Y.
American Water Softener Co, 4th & Lehigh Ave, Philadelphia 33, Pa.
Belco Industrial Equip Div, 52 Iowa Ave, Paterson 3, N. J.
Betz, W H & L D, Gillingham & Worth Sts, Philadelphia 24, Pa.
Bird-Archer Co, 4337 N American St, Philadelphia 40, Pa.
Dacar Chemical Prods Inc, 1007 McCartney St, Pittsburgh 20, Pa.
Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.
Denver Fire Clay Co, P O Box 5510, Denver 17, Colo.
Dominion Chemical Co, 11 W 42nd St, Dept A, New York 18, N. Y.
Drew, E F & Co, Inc, 15 E 26th St, New York 10, N. Y.
Electromatic Water Treatment, Inc, 475 Fifth Ave, New York 17, N. Y.
Feedwaters, Inc, 140 Cedar St, New York 6, N. Y.
Haering & Co, D W, P O Box 6037 Harlandale Station, San Antonio, Texas
Hall Laboratories, Inc, Hagan Bldg, Pittsburgh 30, Pa.
Heller Laboratories, Inc, 196 Morgan St, Jersey City, N. J.
Heilman Boiler Works Co, 132 Linden St, Allentown, Pa.
Illinois Water Treatment Co, 883 Cedar St, Rockford, Ill.
Infilco, Inc, P O Box 5033, Tucson, Ariz.
Jeffrey Mfg Co, 932 N Fourth St, Columbus 16, Ohio
Kuljian Corp, The, 1200 N Broad St, Philadelphia 21, Pa.
Mc Kays Co, 473 Cleveland Ave N, St Paul 4, Minn.
Madden P E & Co, 1543 Morse Ave, Chicago 26, Ill.
Moyer, R E, Inc, 10th & Union Sts, Catasauqua, Pa.
National Aluminate Corp, 6246 W 66th Place, Chicago 38, Ill.
Nokem Co, 4030 Chouteau Ave, St. Louis 19, Mo.
Permutit Co, 330 W 42nd St, New York 36, N. Y.
Polyphase Chemical Services, Inc, 150 Nassau St, New York 38, N. Y.
Refinite Corp, Box 1312, Omaha, Neb.
Saverite Engrg Co, 14th & Garden Sts Hoboken, N. J.
Sterling Water Treatment Co, 1920 W 177th St, Cleveland 2, Ohio
Western Chemical Co, 713-15 Washington St, Kansas City 6, Mo.
Worthington Corp, Harrison, N. J.
Xzit Chemical Co, 158-14th St, Hoboken, N. J.

Index to Former Manufacturers

An alphabetical list of companies taken over, absorbed, or merged— for the convenience of buyers seeking to buy new units or replacement parts

● To help you locate replacement parts for equipment that is no longer made by the original manufacturer, POWER has prepared this index. It is a listing of power-equipment companies which have been purchased or absorbed by other companies.

HOW TO USE: Look for the company name, shown on the nameplate of your equipment, in this alphabetical index. Directly following this listing is the name and address of the company now manufacturing this equipment. For example: If the nameplate on your pump says Alberger Pump Co., look under "Name of Company Absorbed" for Alberger Pump Co. Then, under the name Alberger Pump Co., you will find that the Foster Wheeler Corp. in New York now owns this company, that the pump is no longer being made, but that replacement parts are still available.

NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Advance Pump and Compressor Co —American-Marsh Pumps, Inc, 99 Campito Avenue, NE, Battle Creek, Mich.	Pumps	No	Yes
Aero Pulverizer Co —Foster Wheeler Corp, 165 Broadway, New York, N. Y.	Pulverizers	No	Yes
Aerodyne Atlantic Corp —Green Fuel Economizer Co, 627 Main St, Beacon, N. Y.	Dust Collectors	Yes	Yes
Airex Co —Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.	Valves	Yes	Yes
Alberger Pump Co —Foster Wheeler Corp, 165 Broadway, New York, N. Y.	Heaters & Pumps	No	Yes
American Automatic Ice Machine Co —McQuay Inc, 1600 Broadway St, NE Minneapolis 13, Minn.	Ice Machines	Yes	Yes
American Ball Engine Co —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Steam Engines	Yes	Yes
***American Blower Co** —Troy Engine & Machine Co, Troy, Pa.	American Blower's Type "A" and "E" Vertical Steam Engines	No	Yes
American Brown Boveri —Allis-Chalmers Mfg Co, 1126 S 70th St, Milwaukee 1, Wisc.	Turbo-Blowers Transformers	Yes	Yes
American Filter Co —Oshkosh Filter & Softener Co, 1 Ceape Street, Oshkosh, Wis.	Filters	No	Yes
The Am. High Speed Chain Co —The Union Chain & Mfg Co, Sandusky, Ohio	Roller Chain	Yes	Yes
American Liquid Meter Co —Bowser, Inc, 1302 E Creighton Ave, Fort Wayne 5, Ind.	Liquid Meters	No	Yes
American Relay & Controls, Inc —Ohmite Mfg Co, 4835 W Flournoy St, Chicago 44, Ill.	Relays & Solenoids	Yes	Yes
American Schaeffer & Budenberg Corp —Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.	Insts, Gages, Safety Valves	Yes	No
American Steam Gauge & Valve Mfg Co —Manning Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.	Pressure Gages, Valves	No	No
American Stoker Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Stokers	No	Yes
***American Thermometer Co, Div** —H-B Instrument Company, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.	Thermometers	Yes	Yes
***Ames Iron Works** —Skinner Engine Co, 337 W 12th St, Erie, Pa.	Repair parts for Steam Engines only	Yes	Yes
Ashton Valve Co —Crosby Steam Gage & Valve Co, 10 Roland St, Boston 29, Mass.	Gages, Valves	Yes	Yes
Athol Pump Co —Leavitt Machine Co, 10 E River St, Orange, Mass.	Pumps	No	No
Atlas Imperial Engine Co —National Supply Co, Engine Div, Springfield 99, Ohio	Diesels	Yes	Yes
Aurora Pump & Mfg Co —Aurora Pump Co, Aurora, Ill.	Pumps	Yes	Yes
Badenhausen Corp —Riley Stoker Corp, 9 Neponset St, Worcester, Mass.	Boilers	Yes	Yes
Bagley & Sewall Co —O'Brien Steam Specialty Co, Inc, 312 Heffernan Bldg, Syracuse 2, N. Y.	Traps	No	No
Baldwin-Duckworth Co —Baldwin Duckworth Div, Chain Belt Co, 1674 W Bruce St, Milwaukee, Wis.	Roller Chain, Flexible Couplings	Yes	Yes
Ball Engine Co —Wilson-Snyder Works, Oil Well Supply Div, U S Steel Corp, Braddock, Pa.	Steam Engines	No	Yes
Barr Constructors —Boiler Equipment Trust Co Amherst, Mass.	Soot Blowers	Yes	Yes
Bartlett-Hayward Co —Bartlett-Hayward Div, Koppers Co, Inc, Koppers Bldg, Pittsburgh 19, Pa.	Precipators Couplings Gas Equipment	Yes	Yes
Belfield Valve Co —Industrial Div, Minneapolis-Honeywell Regulator Co, 1901 Windrim Ave, Philadelphia, Pa.	Valves	Yes	Yes

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NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Bell Tool Company —Hill Pump Valve Co, 2728 Elston Ave, Chicago 47, Ill.	Flexible Shafts	Yes	Yes
Bignall & Keeler Machine Works —John Ramming Machine Co, 4591 McRee Ave, St. Louis 10, Mo.	Pipe Threading Machines	Yes	Yes
Bilanx Corp —International Combustion Corp, 436 Pearl St, New York, N. Y.	Steam Separators	Yes	Yes
Blackburn-Smith Mfg Co, Inc —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Filters, Strainers	Yes	Yes
Blake Mfg Co —Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.	Plumbing Specialties	Yes	Yes
The Borden Co —Beaver Pipe Tools Inc, 310 Dana St, NE, Warren, Ohio	Threading Tools	Yes	Yes
***Bowser, Inc** —Manzel Brothers Co, Inc, 315 Babcock St, Buffalo 10, N. Y.	Lubricators	No	Yes
Box Crane & Hoist Corp —Shaw-Box Div, Manning Maxwell & Moore Inc, Muskegon, Mich.	Cranes and Hoists	Yes	Yes
The Brown Engineering Co —The Brady Conveyor Corp, 24 W Jackson Blvd, Chicago 4, Ill.	Ash Conveyors	Yes	Yes
Briggs Filtration Co —Bowser, Inc, Fort Wayne 2, Ind.	Oil Filters	Yes	Yes
Brown Instrument Co —Industrial Div, Minneapolis-Honeywell Regulator Co, 4485 Wayne Ave, Philadelphia, Pa.	Industrial Insts.	Yes	Yes
Buckeye Laboratories —Bowser, Inc, 1302 E Creighton Ave, Fort Wayne 5, Ind.	Oil Reclaiming Equipment	Yes	Yes
Busch-Sulzer Bros. Diesel Engine Co —Nordberg Manufacturing Co, 3073 S Chase Ave, Milwaukee, Wis.	Diesel Engines	Yes	Yes
By-Products Steel Corp —Lukens Steel Co, Coatesville, Pa.	Steel Plate Shapes	Yes	Yes
Cal-Fin Corp —Kentile Co, 58 Second Avenue, Brooklyn 15, N. Y.	Fin Tubing	Yes	Yes
California Tank Co —Santa Fe Tank & Tower Co, 5401 Hoyle Ave, Los Angeles, Calif.	Wood Tanks	Yes	Yes
A. S. Cameron Steam Pump Co —Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.	Pumps	Yes	Yes
Canton Gate Corporation —Canton Stoker Corp, 741 Andrews Place SW, Canton, Ohio	Grates	Yes	Yes
Capacitron Co —Jefferson Electric Co, Bellwood, Ill.	Condensers	Yes	Yes
Carbondale Machine Co —Worthington Corp, 744 Broad St, Newark 2, N. J.	Air Conditioning & Refrigeration Equipment	Yes	Yes
Carpenter Eng & Equip Co —Laclede Stoker Co, 4438 Hunt Ave, St. Louis 10, Mo.	Stokers	Yes	Yes
Casey Hedges Boiler Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Boilers	No	Yes
Centrifugal Mechanical Equip Co —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Centrifuges	Yes	Yes
Chapman-Stein Company —Surface Combustion Corp, Grover & Sherman Sts, Toledo, Ohio	Furnaces	Yes	Yes
Chicago Fuse Co —Jefferson Electric Co, Bellwood, Ill.	Fuses	Yes	Yes
Chicago Metal Hose Co —Flexonics Corp, 1315 S Third Ave, Maywood, Ill.	Metal Hose, Expansion Joints	Yes	Yes
***Cleve. Pneu. Tool Co, Pneu. Div.** —Cleco Div, Reed Roller Bit Co, 2119 Reed St, Houston, Texas	Pneumatic Tools	Yes	Yes
***Cleveland Tool Co** —Centaur Div LeRoi Co, 1706 S 68th St, Milwaukee 14, Wis.	Air Tools	Yes	Yes
***Climax Engineering Co** —Controls Div, Climax Controls Div, Black Sivalls & Bryson, Inc, Tulsa, Okla.	Controls	Yes	Yes
***Cochrane Corporation** —The Hays Corporation, Michigan City, Ind.	Flow Meters	Yes	Yes
***Cochrane Corp, Instrument Div,** —Pennsylvania Industrial Instrument Co, 3116 N 17th St, Philadelphia, Pa.	Meters, Instruments	Yes	Yes
Coffin Valve Co —The Chapman Valve Mfg Co, 203 Hampshire St, Indian Orchard, Mass.	Sluice Gates	Yes	Yes
Columbian Iron Works —Mueller Co, 512 W Cerro Gordo St, Decatur 70, Ill.	Water Controlling Equipment	Yes	Yes
Commonwealth Electric Corp. Ltd. —Reliance Electric & Engrg Co, (Canada, Ltd,) Welland, Ontario, Canada	Motors, Generators Transformers Mg sets	Yes	Yes
Condit Co —Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee 1, Wis.	Circuit Breakers	Yes	Yes
Conn. Filter Corp —Cuno Engrg Corp, 80 S Vine St, Meriden, Conn.	Filter Cartridges	Yes	Yes
D. Connelly Boiler Co —Foster Wheeler Corp, 165 Broadway, New York, N. Y.	Boilers	No	Yes
Connelly Iron Sponge & Governor Co —Norwalk Valve Co, 33 Railroad Ave, South Norwalk, Conn.	Regulators, Gages, Check Valves	Yes	Yes
Cook Co, A D —Byron Jackson Co, P O Box 2017 Terminal Annex, Los Angeles 54, Calif.	Pumps	Yes	Yes
Coxe Traveling Grate Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Stokers	Yes	Yes
Cream City Foundry —Cutler-Hammer, Inc, 315 N 12th St, Milwaukee, Wis.	Castings	Yes	Yes
Cureton Castings Co —Cooper-Bessemer Corp, Mount Vernon, Ohio	Castings	No	No
Danville Iron & Steel Co —Kennedy-Van Saun Mfg & Engrg Corp, 2 Park Ave, New York, N. Y.	Foundry Prods	Yes	Yes
***Dapco Products, Inc** —Johnson Service Co, 507 S Michigan Ave, Chicago, Ill.	Air Compressors	Yes	Yes
G. M. Davis Regulator Co —Davis Regulator Co, 2540 S Washtenaw Ave, Chicago, Ill.	Regulators	Yes	Yes
Dayton-Dowd Company —Peerless Pump Div, Food Machinery Corp, 301 West Ave, 26 Los Angeles, Calif.	Horizontal Pumps	Yes	Yes
DeBothezat Impeller Co —American Machine & Metals, Inc, East Moline, Ill.	Fans & Blowers	Yes	Yes
De La Vergne Engine Co —Baldwin-Lima-Hamilton Co, Philadelphia 42, Pa.	Diesel Engines	Yes	Yes
Julian D'Este Div. Am. Chain & Cable Co —Kaye & MacDonald, Inc, 94 Franklin Ave, West Orange, N. J.	Steam Specialties	Yes	Yes
Detroit Electric Furnace Co —Kuhlman Elec Co, 2700 Garfield Blvd, Bay City, Mich.	Elec. Furnaces	Yes	Yes
Dixie Machinery Mfg Co —Pennsylvania Crusher Co, 1707 Liberty Trust Bldg, Philadelphia 7, Pa.	Grinding Equipment	Yes	Yes
J. P. Devine Mfg Co —H. K. Porter Co, Pittsburgh, Pa.	Heat Exchangers	Yes	Yes

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NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Dover Boiler Works —L. O. Koven & Bro, Inc, Ogden & Koven Aves, Jersey City 7, N. J.	Steel Fabrications	Yes	Yes
***Richard Dudgeon Co** —Wilson-Dudgeon Div, Thomas C. Wilson, Inc, 21-11 44th Ave, Long Island City 1, New York	Tube Expanders	Yes	Yes
Dwight Mfg Co —F W Dwyer Mfg Co, 317 S Western Ave, Chicago, Ill.	Cos Indicators	No	No
Eddy Valve Co —James B. Clow & Sons, 201-299 N Talman Ave, Chicago 80, Ill.	Valves	Yes	Yes
Edgemoor Iron Works Division —Condenser Service and Engrg Co, Inc, 89 River St, Hoboken, N. J.	Boilers, Tanks	Yes	Yes
Electrical Instrument & Engrg Co —James G. Biddle Co, 1316 Arch St, Philadelphia, Pa.	Elec. Instruments	No	Yes
Electrimatic Valve Co —Jas P Marsh Corp, Skokie, Ill.	Regulators, Valves	Yes	Yes
Electro Chemical Engineering Corp —Dearborn Chemical Co, 310 S Michigan Ave, Chicago 4, Ill.	Meters, Instruments	Yes	Yes
Engberg's Electric & Mechanical Works —Troy Engine & Machine Co, Troy, Pa.	Generators & Steam Engines	No	Yes
Enterprise Engine & Foundry Co —Enterprise Div, General Metals Corp, 18th & Florida Streets, San Francisco, Calif.	Diesels, Oil Burners	Yes	Yes
Epping-Carpenter Pump Co —Worthington Corp, 744 Broad St, Newark 2, N. J.	Pumps	No	No
***Frederick Flader, Inc** —Clark Bros, Olean, N. Y.	Compressors	Yes	Yes
Floorsteel Co —Wm. F. Klemp Co, 6640 S Melvina Ave, Chicago, Ill.	Steel Floor Armor	Yes	Yes
Foos Gas Engine Co —Fulton Iron Works Co 1259 Delaware Ave, St. Louis 14, Mo.	Gas & Gasoline Engines	No	Yes
***Frederick Engineering Co** —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Stokers	Yes	Yes
Fuerst-Friedman Co —Columbia Electric Mfg Co, 4519 Hamilton Ave, Cleveland 14, Ohio	Motors, Generators	Yes	Yes
Fuller Lehigh Co —The Babcock & Wilcox Co, 161 E 42nd St, New York, N. Y.	Pulverized Coal Equipment	Yes	Yes
Furnace Engineering Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Pulverizers	No	Yes
Gamon Meter Co —Worthington-Gamon Meter Co, Div, Worthington Corp, 744 Broad St, Newark 2, N. J.	Meters	Yes	Yes
Gardner Governor Co —Gardner-Denver Co, Quincy, Ill.	Pumps, Compressors	Yes	Yes
Gast Mfg Corp —Johnson Corp, 865 Wood St, Three Rivers, Mich.	Air Separators	Yes	Yes
***Gehl Bros. Mfg Co, Stoker Div** —Eddy Stoker Corp, 4711 West North Ave, Chicago 39, Ill.	Stokers	Yes	Yes
Gehnrich Oven Division —W. S. Rockwell Co, 200 Eliot St, Fairfield, Conn.	Industrial Ovens	Yes	Yes
General Air Filter Co —American Air Filter Co. Inc, First & Central Ave, Louisville 8, Ky.	Filters	No	No
General Machinery Co —Lima-Hamilton Works, Hamilton, Ohio	Diesels, Steam Engines	Yes	Yes
Gills & Geoghegan Hoist Corp —Brady Conveyors Corp, 20 Jackson Blvd, Chicago 4, Ill.	Hoists	Yes	Yes
Gilman Mfg Co —Worthington Corp, 744 Broad St, Newark 2, N. J.	Rock Drill Equip.	Yes	Yes
Girtanner Engrg Corp —National Conveyors Co, Inc, 54 Church St, New York 7, N. Y.	Conveyors	Yes	Yes
***Globe Mfg Co, Air Compressor Div** —Schramm, Inc, West Chester, Pa.	Air Compressors	Yes	Yes
Green Engineering Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Stokers	Yes	Yes
Grieve Grate Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Grates	Yes	Yes
H-B Electric Co —H-B Instrument Co, Inc, 2633 Trenton Ave, Philadelphia 25, Pa.	Relays	Yes	Yes
George J Hagan Co —Beaumont Birch Co, 1505 Race St, Philadelphia 2, Pa.	Steam Jet Ash-Conveyors	No	Yes
Hall Mfg Co —Waterbury Tool Div, Vickers, Inc, 188 East Aurora St, Waterbury 67, Conn.	Valve Refacers, Valve Seat Grinders	Yes	Yes
Hanlon Waters, Inc. —Climax Engineering Co, Box 1529 Tulsa 1, Okla.	Valves, Controls	Yes	Yes
Hare Stoker Corp —Hoffman Combustion Engrg Co, 710 Marquette Bldg, Detroit, Mich.	Stokers	No	Yes
Harrisburg Engine Co —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Steam Engines	Yes	Yes
Heggie-Simplex Boiler Co —Lookout Boiler & Mfg Co, Mfrs. Rd & Compress St, Chattanooga, Tennessee	Heating Boilers	Yes	Yes
Heine Boiler Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Boilers	No	Yes
Hercules Float Works —Henry Owens & Co, Inc, 51 Washington Ave, Cranston 7, R. I.	Floats	Yes	Yes
Hextell Co —Wm. F. Klemp Co, 6640 S Melvina Ave, Chicago, Ill.	Heavy Duty Floor Covering	Yes	Yes
M. A. Hofft Co —The Hofft Co, Inc, Georgia & West Sts, Indianapolis, Ind.	Waste Fuel Furnaces	Yes	Yes
Hohmann-Nelson Co —Manning, Maxwell & Moore, Inc, 250 E Main St, Stratford, Conn.	Controllers	No	No
Honeywell-Heating Specialties Co —Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave, S, Minneapolis, Minn.	Heating Controls	No	No
Wilbur G Hudson Corp —National Conveyors Co, Inc, 54 Church St, New York 7, N. Y.	Conveyors	Yes	Yes
C. W Hunt Co —Gifford-Wood Co, Hudson, N. Y.	Gates & Valves	Yes	Yes
Hurst Industries, Inc —Cardox Corp, 307 N Michigan Ave, Chicago, Ill.	Fire Fighting Equipment	Yes	Yes
***Hydraulic Turbine Div, Holyoke Machine Co** —S. Morgan Smith Co, 500 Lincoln St, York, Pa.	Hydraulic Turbines	Yes	Yes
Hynes Elec Heating Co —Hynes Elec Heating & Process Div, Martin-Quaid Co, 1815 W Sedgeley Ave, Philadelphia, Pa.	Elec. Heaters	Yes	Yes
Independent Air Filter Co —American Air Filter Co, Inc, First & Central Aves, Louisville 8, Ky.	Filters	No	Yes
Instant Water Heater Co —Johnson Corp, 865 Wood St, Three Rivers, Mich.	Water Heaters	Yes	Yes

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NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Instrument Service Co —Condenser Service and Engrg Co, Inc, 89 River St, Hoboken, N. J.	Instruments and Repair Service	Yes	Yes
Iowa Valve Co —James B, Clow & Sons, 201-299 N Talman Ave, Chicago 80, Ill.	Valves	Yes	Yes
Jarecki Mfg Co —Jarecki Valve Div. H. K. Porter Co, Inc, 1150 North Peoria, Tulsa, Okla.	Valves	Yes	Yes
Kelly & Jones Co —Walworth Co, 60 E 42nd St, New York, N. Y.	Valves, Fittings	Yes	Yes
Kerr Turbine Company —Elliott Co, Jeannette, Pa.	Steam Turbine	Yes	Yes
Kimball-Krough Pump Co —Peerless Pump Div, Food Machinery Corp, 301 W Ave, 26 Los Angeles, Calif.	Pumps	Yes	Yes
***King-Seeley Corp, Servo Governor Div.** —Pierce Governor Co, 1611 Ohio Ave, Anderson 7, Ind.	Governors	Yes	Yes
Kitson Company, Div —The Welsbach Corp, 1500 Walnut St, Philadelphia 2, Pa.	Valves	Yes	Yes
L-R Mfg Co —Ripley Co, Inc, Factory St, Middletown, Conn.	Blowers	Yes	Yes
***Laclede Christy Clay Prods Co** —Laclede Stoker Co, 4438 Hunt Ave, St. Louis 10, Mo.	Stokers	Yes	Yes
Ladd Water Tube Boiler Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Boilers	No	Yes
La Del Conveyor & Mfg Co —Joy Mfg Co, Olive Bldg, Pittsburgh 22, Pa.	Fans, Blowers, Conveyors	Yes	Yes
The Lagonda Mfg Co —Lagonda Div, Elliott Co, Springfield, Ohio	Tube Cleaners	Yes	Yes
Lawrence Machine Co —Lawrence Machine & Pump Corp, 371 Market St, Lawrence, Mass.	Centrifugal Pumps	Yes	Yes
C. H. Leach Co —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Refinery Equipment	Yes	Yes
Lee Engineering Co —Condenser Service and Engrg Co, Inc, 89 River St, Hoboken, N. J.	Unit Heaters	Yes	Yes
H. Levine Cooperage Tank Dept —Santa Fe Tank & Tower Co, 5401 Boyle Ave, Los Angeles, Calif.	Tanks, Cooling Towers	Yes	Yes
Liberty Manufacturing Co —Elliott Company, Jeannette, Pa.	Tube Cleaners	Yes	Yes
Lima-Hamilton Corp —Baldwin-Lima-Hamilton Co, Philadelphia 42, Pa.	Diesel & Steam Engines, Grinding Equipment & Machinery	Yes	Yes
Liquid Conditioning Corp —Cochrane Corp, 17th St, Allegheny Ave, Philadelphia 32, Pa.	Water-Treatment Equipment	Yes	Yes
Locomotive Pulverized Fuel Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Pulverized Fuel Equipment	Yes	Yes
Lorimer Engine Co —Atlas-Imperial Diesel Engine Co, 1000 19th Ave, Oakland 6, Calif.	Diesel Engines	Yes	Yes
Lubrication Devices —The Farval Corp, 3250 E 80th St, Cleveland 4, Ohio	Centralized Lubrication Systems	Yes	Yes
Lukenweld, Inc —Lukens Steel Co, Coatesville, Pa.	Welders	Yes	Yes
Mantle Engineering Co —Surface Combustion Corp, Grover & Sherman Sts, Toledo, Ohio	Heat Recuperators	No	Yes
Mark Manufacturing Co —Clayton Mark & Co, 1900 Dempster St, Evanston, Ill.	Unions	Yes	No
McCann Harrison Co —J. O. Ross Engrg Corp, 350 Madison Ave, New York 17, N. Y.	Unit Heaters	Yes	Yes
McIntyre Co —Eastern Industries, Inc, 296 Elm St, New Haven 6, Conn.	Hydraulic Pumps, Fluid Motors	Yes	Yes
Mercury Clutch Corp —Automatic Steel Products, Inc, Canton 6, Ohio	Auto. Clutches	Yes	Yes
Metalweld, Inc —Worthington Corp, 744 Broad St, Newark 2, N. J.	Portable Compressors	Yes	Yes
Midwest Air Filters, Inc —American Air Filter Co, Inc, First & Central Ave, Louisville 8, Ky.	Filters	Yes	Yes
Mines Equipment Co —Joy Mfg Co, Oliver Bldg, Pittsburgh 22, Pa.	Electrical Distribution Systems	Yes	Yes
Minneapolis Heat Regulator Co —Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave, S, Minneapolis, Minn.	Heating Controls	No	No
Moore Steam Turbine Corp —Worthington Corp, 744 Broad St, Newark 2, N. J.	Turbines, Turbine-Generators	Yes	Yes
I. P. Morris —Baldwin-Lima-Hamilton Co, Philadelphia 42, Pa.	Hydraulic Turbines	Yes	Yes
Levi Morris & Co —Baldwin-Lima-Hamilton Co, Philadelphia 42, Pa.	Hydraulic Turbines	Yes	Yes
Morrow Mfg Co —McNally Pittsburg Mfg Corp, Pittsburg, Kansas	Coal Preparation Equipment	Yes	Yes
Mount Vapor Heating Co —C E Squires Co, 18502 Syracuse Ave, Cleveland 10, Ohio	Heating Specialties	Yes	Yes
Murphy Iron Works —Riley Stoker Corp, 9 Neponset St, Worcester, Mass.	Stokers	Yes	Yes
Nagle Brothers —Nagle Pumps, Chicago Heights, Ill.	Pumps	Yes	Yes
National Air Filter Co —American Air Filter Co, Inc, First & Central Ave, Louisville 8, Ky.	Filters	Yes	Yes
National Chipveyor Systems —National Conveyors Co, Inc, 54 Church St, New York 7, N. Y.	Conveyors	Yes	Yes
National Conveyor Company —National Conveyors Co, Inc, 54 Church St, New York 7, N. Y.	Conveyors	Yes	Yes
National Machine Wks —The E. H. Wachs Co, 1525 Dayton, Chicago, Ill.	Blast Gates, Valves	Yes	Yes
National Pipe & Foundry Co —Walworth Co, 60 E 42nd St, New York, N. Y.	Soil Pipe, Fittings	No	No
National Regulator Co —Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave, S, Minneapolis, Minn.	Pneumatic Controls	Yes	Yes
Neilan Co —Mason-Neilan Regulator Co, 1190 Adams St, Boston 24, Mass.	Automatic Control Equipment	No	No
Herman Nelson Div —American Air Filter Co, Inc, Louisville 8, Ky.	Unit Heaters	Yes	Yes
N. Y. Continental Jewel Filtration Co —American Water Softener Co, Lehigh Ave & Fourth St, Phila 33, Pa.	Filters	Yes	Yes
Nichol Products Corp —J. O. Ross Engrg Corp, 350 Madison Ave, New York 17, N. Y.	Unit Heaters	Yes	Yes
***Niles Crane Wks, Niles-Bement-Pond Co** —Shepard Niles Crane & Hoist Corp, 410 Schuyler Ave, Montour Falls, N. Y.	Elec. Cranes	Yes	Yes

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NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Niles Tool Works —Lima-Hamilton Works, Hamilton, Ohio	Diesels, Steam Engines	Yes	Yes
Northern Pump Co —Northern Ordnance, Inc, 48th & N. E. Marshall, Minneapolis, Minn.	Pumps	No	Yes
Northern Water Gauge Co —Swift Lubricator Co, Inc, 100 Burke St, Elmira, N. Y.	Gauges	Yes	Yes
The Ohio Blower Co, Transformers Div —Standard Transformer Co, Dana Avenue, Warren, Ohio	Traps, Ventilators, Exhaust Heads, Separators	Yes	Yes
***Packard Electric Co, Transformer Div** —Standard Transformer Co, Dana Avenue, Warren, Ohio	Transformers	No	Yes
Pomona Pump Co —Fairbanks, Morse & Co, 600 S Michigan Ave, Chicago 5, Ill.	Pumps	Yes	Yes
Pan American Engineering Co —Simplex Oil Heating Corp, 11 Park Place, New York 7, N. Y.	Oil & Gas Burning Equipment	Yes	Yes
Stoker Div, Peerless Mfg Corp —Chicago Stoker Corp, 4711 W. North Ave, Chicago 39, Ill.	Stokers	Yes	Yes
Pelton Water Wheel Co —Baldwin-Lima-Hamilton Co, Philadelphia 42, Pa.	Water Wheels, Hydraulic Turbines	Yes	Yes
Pfeil Cooperage Works —Arrow Tank Co, Inc, 75 Leroy Ave, Buffalo 14, N. Y.	Wood Tanks	Yes	Yes
Pickering Governor Co —Champlain Co, Inc, Bloomfield, N. J.	Governors	Yes	Yes
Phillips Pump & Tank Co —Wayne Pump Co, Tecumseh St, Fort Wayne, Ind.	Lubricating Equip.	Yes	Yes
Pittsburgh Seamless Tube Co —The Babcock & Wilcox Co, 161 E 42nd St, New York, N. Y.	Tubes	Yes	Yes
Pittsburgh Transformer Co —Allis-Chalmers Mfg Co, 1126 S 70th St, Milwaukee 1, Wisconsin	Transformers	Yes	Yes
Platt Iron Works —Worthington Corp, 774 Broad St, Newark 2, N. J.	Feedwater Heaters, Water Wheels	No	No
Pottstown Metal Products —Cochrane Corp, 17th & Allegheney Ave, Philadelphia, Pa.	Steel Tanks	Yes	Yes
Pottsville Casting & Machine Shops, Inc —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Cast Iron Shapes	Yes	Yes
Power Specialty Co —Foster Wheeler Corp, 165 Broadway, New York, N. Y.	Superheaters	No	Yes
Pratt & Cady Co —The R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.	Valves	Yes	Yes
Quimby Pump Co —Warren Steam Pump Co, 1234 Bridges Ave, Warren, Mass.	Pumps	Yes	Yes
Railway & Industrial Engrg Co —R & I E Equip Div, ITE Circuit Breaker Co, 19th & Hamilton Sts, Phila 30, Pa.	Power Switches	Yes	Yes
Ransome Machinery Co —Ransome Machinery Div, Worthington Corp, 744 Broad St, Newark 2, N. J.	Industrial Mixers, Welding Positioners	Yes	Yes
Rateau-Battu-Smoot Co —Elliott Co, Jeannette, Pa.	Centrifugal Blowers	Yes	Yes
Raymond Bros Impact Pulverizer Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Pulverizers	Yes	Yes
Reading Steel Casting Co —The R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.	Valves, Fittings	Yes	Yes
Reading Valve & Fitting Co —The R-P & C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.	Valves, Fittings	Yes	Yes
Readrite Meter Works —J—B—T Instruments Inc, 461-B Chapel St, New Haven 8, Conn.	Meters	No	Yes
Reed Air Filter Co —American Air Filter Co, Inc, First & Central Ave, Louisville 8, Ky.	Filters	No	Yes
Richardson-Phenix Co —Bowser, Inc, 1302 E Creighton Ave, Fort Wayne 5, Ind.	Lubricating Equip	Yes	Yes
Rider-Ericsson Engine Corp —Spence Engineering Co, Inc, Walden, N. Y.	Pumping Engines	No	No
Ridgway Dynamo & Engine Co —The Elliott Co, Jeannette, Pa.	Steam Engines, Blowers	No	Yes
	Motors, Generators,	Yes	Yes
Riehl Bros Testing Machine Co —American Machine & Metals, Inc, East Moline, Ill.	Testing Machinery	Yes	Yes
Ring Balance Instrument Co —Hagan Corp, 323 Fourth Ave, Pittsburgh, Pa.	Flow Meters	Yes	Yes
Rockwell Engineering Co —W. S. Rockwell Co, 200 Eliot St, Fairfield, Conn.	Industrial Furnaces	Yes	Yes
P H & F M Roots Co —Roots-Connersville Blower Corp, 900 W Mount St, Connersville, Ind.	Motors, Generators, Generator Sets	Yes	Yes
***Ross Heater & Mfg Co** —Warren Webster & Co, 17th & Federal Sts, Camden, N. J.	Blowers, Gas Pumps, Meters	Yes	Yes
Roth Bros —Century Electric Co, 1806 Pine St, St. Louis 3, Mo.	Exp. Joints	Yes	Yes
The Roto Co —Roto Div, Elliott Co, Newark, N. J.	Tube Cleaners	Yes	Yes
R-S Products Corp —S. Morgan Smith Co, 500 Lincoln St, York, Pa.	Valves	Yes	Yes
Rust Boiler Co —The Babcock & Wilcox Co, 161 E 42nd St, New York, N. Y.	Boilers	No	Yes
Safety Wrench & Appliance Co —Lowell Wrench Co, Worcester 8, Massachusetts	Wrenches, Car Movers	Yes	Yes
***Saval Inc, Industrial Valve Div** —Barksdale Valves, 4905 Santa Fe Ave, Los Angeles, Cal.	Valves	Yes	Yes
Sawyer Elec Mfg Co —A O Smith Corp, Pacific Coast Works, Motor Div, 5701 Smithway St, Los Angeles 22, Cal.	Motors,	Yes	Yes
	Grinders,	No	No
	Blowers	No	No
Jos. F. Schiller Valve Co —Schade Valve Mfg Co, 2529 N Bodine St, Philadelphia, Pa.	Valves	Yes	Yes
Schrader Power Pump Co —Wagner Steam Pump Co, Canton, Ohio	Pumps	Yes	Yes
A. Schrader's Sons —Scovill Mfg Co 99 Mill St, Waterbury 91, Conn.	Indus. Air Equip	Yes	Yes
Scranton Pump Works —Condenser Service and Engineering Co, Inc, 89 River St, Hoboken, N. J.	Pumps	Yes	Yes
The "S-C" Regulator Mfg Co —The Swartwout Co, Cleveland, Ohio	Feedwater Regulators, Governors, Control Valves	Yes	Yes
Semler Co —Kennedy Valve Mfg Co, 1060 E Water St, Elmira, N. Y.	Pipe Fittings	Yes	Yes
The Shone Co —Yeomans Bros Co, 1433 N Dayton, Chicago 22, Ill.	Pneumatic Sewage Ejectors	Yes	Yes
Simplex Ejector & Aerator Corp —Yeomans Bros Co, 1433 N Dayton, Chicago 22, Ill.	Sewage Equip	Yes	Yes
Smoot Engineering Corp —Republic Flow Meters Co, 2222 Diversey Parkway, Chicago, Ill.	Controls	Yes	Yes
Southwark Foundry & Machine Co —Baldwin-Lima-Hamilton Inc., Philadelphia 42, Pa.	Hydraulic Machinery	Yes	Yes
***Sprague Div General Electric Co** —Shepard Niles Crane & Hoist Corp, 410 Schuyler Ave, Montour Falls, New York	Elec. Hoists	Yes	Yes

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NAME OF COMPANY ABSORBED	Product	Still Mfd.	Replacements Available
Standard Steam Turbine Co —Murray Iron Wks Co, 1106 Wash. St, Burlington, Iowa	Steam Turbines	No	Yes
Staples Manufacturing Co —Staples & Pfeiffer, 528 Bryant St, San Francisco 7, Cal.	Strainers	Yes	Yes
Star Brass Mfg Co, Gauge Div —Williams & Hussey Machine Co, Wilton, New Hampshire	Gauges	Yes	Yes
Star Brass Mfg Co, Valve Div —Kunkle Valve Co, 119-121 S Clinton St, Fort Wayne 2, Ind.	Valves	Yes	Yes
Star Electric Motor Co —Star-Kimble Mfg Co, Div, Miehle Printing Press Co, 200 Bloomfield Ave, Bloomfield, N. J.	Motors	Yes	Yes
Staynew Filter Co —Dollinger Corp, 20 Centre Park, Rochester, N. Y.	Filters	Yes	Yes
Sterling Pump Company —Peerless Pump Div, Food Machinery Corp, 301 West Avenue, 26, Los Angeles, Cal.	Pump & Water System	No	Yes
Stirling Consolidated Boiler Co —The Babcock & Wilcox Co, 161 E 42nd St, New York, N. Y.	Boilers	Yes	Yes
***B F Sturtevant Co, Cast Iron Economizer Div** —Green Fuel Economizer Co, Inc, 627 Main Street, Beacon, N. Y.	Economizers	Yes	Yes
Sullivan Machinery Co —Joy Mfg Co, Oliver Bldg, Pittsburgh 22, Pa.	Air Compressors	Yes	Yes
Sundh Electric Co —The Clark Controller Co, 1146 E 152nd St, Cleveland, Ohio	Elec. Controls	Yes	Yes
***Superior Eng Div, Nat'l Supply Co** —Sterling Engine Co, 1270 Niagara St, Buffalo 13, N. Y.	Models AB & DB Diesels	Yes	Yes
Swendeman, Inc —Leavitt Machine Co, 10 E River St, Orange, Mass.	Traps	Yes	Yes
Synchro-Master Co —Proportioneers, Inc, 345 Harris St, Providence, R. I.	Engine Synchronizers	No	Yes
Thermidaire Corp —E K Campbell Heating Co, 1809 Manchester Ave, Kansas City, Mo.	Heating Units	Yes	Yes
Thomas Machine Co —Shingle & Gibb Co, 5400 Grays Ave, Philadelphia, Pa.	Conveyors	Yes	Yes
Time-O-Stat Controls Co —Minneapolis-Honeywell Regulator Co, 2753 Fourth Ave, S, Minneapolis, Minnesota	Heating Controls	No	No
Titusville Forge Co —Titusville Iron Wks Div, Struthers-Wells Corp, Titusville, Pa.	Forgings	Yes	Yes
Titusville Iron Wks Co —Titusville Iron Wks Div, Struthers-Wells Corp, Titusville, Pa.	Boilers, Pumps, Tanks	Yes	Yes
Tolhurst Machine Works —American Machine & Metals, Inc, East Moline, Ill.	Centrifugal Extractors	Yes	Yes
***Torrington Manufacturing Co** —Manzel Brothers Co, 315 Babcock St, Buffalo 10, N. Y.	Lubricators	No	Yes
Trayler Vibrator Co —Jeffrey Mfg Co, 932-99 N Fourth St, Columbus 16, Ohio	Control Panels	Yes	Yes
Trumbull-Vanderpool Company —Cutler-Hammer, Inc, 315 N 12th St, Milwaukee, Wisc.	Safety Switches, Conveyors	No	No
Underfeed Stoker Co of America —Riley Stoker Corp, 9 Neponset St, Worcester, Mass.	Stokers	Yes	Yes
Union Electric Mfg Co —Cutler-Hammer, Inc, 315 N 12th St, Milwaukee, Wisc.	Motor Controls	No	Yes
United Cinephone Corp —Ripley Co, Inc, Factory St, Middletown, Conn.	Electronic Controls	Yes	Yes
United Machinery and Mfg Co —Ripley Co, Inc, Factory St, Worcester, Mass.	Stokers	Yes	Yes
United States Gauge Co —American Machine & Metals, Inc, East Moline, Illinois	Gauges	Yes	Yes
The Unit Heater & Cooler Co —D. J. Murray Mfg Co, Wausau, Wisc.	Unit Heaters	Yes	Yes
The Vaile Kimes Co —McKays Co, 473 Cleveland Ave N, St Paul 4, Minn.	Water Pumps & Systems	Yes	Yes
Valentine Fire Brick Co —A. P. Green Fire Brick Co, Mexico, Mo.	Refractory Brick	Yes	Yes
Valve Maintenance Co —Boiler Equipment Trust, Main St, Amherst, Mass.	Valves	Yes	Yes
The Van Dorn Elec Tool Co —The Van Dorn Elec Tool Co Div, The Black & Decker Mfg Co, 600 E Pa. Ave, Towson 4, Md.	Portable Elec Tools	Yes	Yes
Voss Ice Machine Works —Voss Machine Wks, 242 E 122nd St, New York, N. Y.	Compressors	Yes	Yes
Walsh Weidner Boiler Co —Combustion Engrg-Superheater, Inc, 200 Madison Ave, New York, N. Y.	Boilers	No	Yes
Wappet, Inc —Mall Tool Co, 7728 South Chicago Ave, Chicago, Ill.	Elec Tools	Yes	Yes
Warnock Mfg Co —Lowell Wrench Co, Worcester 8, Mass.	Pipe Wrenches	Yes	Yes
Waterfilm Boilers, Inc —L O Koven & Brother, Inc, 154 Ogden Ave, Jersey City 7, N. J.	Low Pressure Heating Boilers, Hot Water Heaters	Yes	Yes
Weeks Merit System —Columbia Machine Co, 217 Conant St, Pawtucket, R. I.	Combustion Control Systems	Yes	Yes
Wescott Valve Co —Walworth Co, 60 E 42nd St, New York, N. Y.	Steel Valves & Fittings	Yes	Yes
Well Equipment Mfg Co —Chiksan Co, 330 N Pomona Ave, Brea, Calif.	Unions, Plugs	Yes	Yes
Wheeler Mfg Co, C. H., Div —Hamilton-Thomas Corp, 1000 Weller Ave, Hamilton, Ohio	Condensers, Cooling towers, heat exchange equipment	Yes	Yes
Wheeler Condenser & Engrg Co —Foster Wheeler Corp, 165 Broadway, New York, N. Y.	Condensers	No	Yes
Whitcomb Locomotive Co —Baldwin-Lima-Hamilton Inc, Philadelphia 42, Pa.	Industrial Locomotives	Yes	Yes
D W Whitehead Mfg Corp —L O Koven & Brother Inc, 154 Ogden Ave, Jersey City 7, N. J.	Hot Water Heaters	Yes	Yes
***The Whitin Machine Works** —Troy Engine & Machine Co, Troy, Pa.	Steam Engines	Yes	Yes
D. E. Whiton Machine Co —The Whiton Machine Co, New London, Conn.	Steam Turbines	Yes	Yes
Wilbraham Green Blower Co —Roots-Connersville Blower Corp, 900 W Mount St, Connersville, Ind.	Blowers, Gas Pumps, Meters	Yes	Yes
Williams, B S, Co —Taco Heaters, Inc, 137 South St, Providence, R. I.	Oil Coolers	Yes	Yes
Winton Engine Co —Cleveland Diesel Engine Div, General Motors Corp, 2160 W 106th St, Cleveland 11, O.	Diesel Engines	Yes	Yes
Worth Steel Co —Colorado Fuel & Iron Corp, Denver, Colo.	Steel Pipe, tanks, plates	Yes	Yes
Yaxley Mfg Co —P. R. Mallory & Co, Inc, Mallory Bldg, Indianapolis, Ind.	Switches, Controls	Yes	Yes
Yeager Mfg Co —Homestead Valve Mfg Co, P O Box 210, Coraopolis, Pa.	Steam Cleaners	Yes	Yes
York Oil Burner Co —York Shipley, Inc, York, Pa.	Oil Burners	Yes	Yes
The Youngstown Steel Products Co —Clayton Mark & Co, 1900 Dempster St, Evanston, Ill.	Unions	Yes	No

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REVIEW OF NEW PLANT EQUIPMENT—1952

On this and the following pages, POWER presents its annual review of new plant equipment and supplies. These are selected from regular POWER issues July, 1951 through June, 1952; some are condensed for your convenience, and many are illustrated. For further details, fill out and send in the postpaid cards from page 155.

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Miscellaneous equipment 154

FORCED-DRAFT FAN **P904**

Large, deep-inlet cones, streamlined to reduce inlet turbulence; open space between wheels instead of a common center disk on double-wheel models permits 4-way diffusion of air. Oversize housing to further assist diffusion make up the principal improved features of the company's new forced-draft fan. These features are said to provide a more complete conversion of velocity pressure to static and improve fan efficiency.

Prat-Daniel Corp, East Port Chester, Conn.

AIR FILTER **P907**

Absolute air filter developed originally for the Atomic Energy Commission is said to remove better than 99.98% of all dust, smoke, fumes, radioactive particles, spores, according to its manufacturer. It is now being produced in quantity for commercial use and comes in two standard sizes with rated capacities of 500 to 850 cfm.

Cambridge Corp, 350 S Geddes St, Syracuse, N.Y.

SELF-CONTAINED AIR-CONDITIONER **P1017**

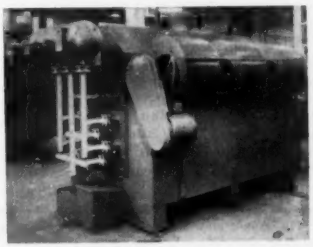
Self-contained air conditioner is designed to save floor space, cut service and maintenance to a minimum and operate quietly. Vibration-muffling spring mounting of compressor and full glass-fiber acoustic and thermal insulation of casing contribute to quiet operation. Two-knob control panel on front permits easy setting of desired temperature, operation of unit for heating or cooling, or use of fan alone. These units are made with capacities of 3, 5 and 7½ tons.

The Trane Co, La Crosse, Wis.

DUCT FURNACES **P1228**

Durable one-piece cast iron heat exchanger and combustion chamber can be put in ducts of air conditioning system for local heating. Built-in draft hood absorbs all chimney action and conserves heat. Sizes from 12,000 to 200,000 Btu input per hr. Furnaces are shipped completely assembled with controls and built-in draft diverter. AGA tested and approved at 2 in. w.g. pressure.

Automatic Gas Equipment Co, 550 Brushton Ave, Pittsburgh 21, Pa.



SPRAY COOLER **P1211**

Improved *No Frost* spray cooler differs from previous models—air enters through fans, is blown through the units. It passes over refrigeration coils and through a spray of *No Frost* liquid solution that prevents condensation of water and formation of ice or frost on the coils. Chilled air, which may be as low as –20 F, passes direct from spray chamber into the room. It contains no reheat from the fans.

Niagara Blower Co, 405 Lexington Ave, New York 17, N.Y.

CENTRIFUGAL FAN **P1102**

Centrifugal-fan arrangement features weatherproof hood over motor-drive section. When protected by hood, fan may be installed outdoors without further enclosure. Available with wheel dia as large as 60 in., backwardly inclined and forwardly curved blades, single-width single-inlet models in Class I construction. High efficiency, low noise and low horsepower.

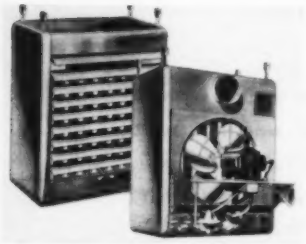
The Trane Co, La Crosse, Wis.

PANEL VENT SETS **P451**

For use at free delivery or relatively low static pressures, these fans are available with wheels 24-, 30- and 36-in. dia. Air-moving capacities range up to 13,190 cfm. Vent sets have totally enclosed ball-bearing motors wound for dual voltage.

DeBothezat Fans Div, American Machine and Metals, Inc, E Moline, Ill.

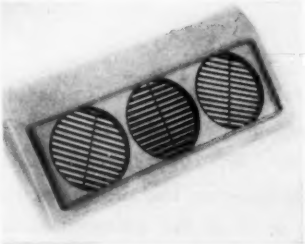
HERE ARE 3 ITEMS THAT MAY FIT INTO YOUR HEATING AND AIR-CONDITIONING PLANS



UNIT HEATER P824

Gas-fired unit air heaters including fan blower and duct-type models with sheet-steel and cast-iron heat exchangers are designed for use with natural, manufactured, mixed, or propane gas. Heaters are housed in heavy-gage steel cabinets. All heat generated by the burning gas goes directly to the heat exchanger and then to the circulating air. The *Series 22* are available in the fan type in ranges from 55,000 to 200,000 Btu per hr. *Series 20*, with cast-iron heat exchangers, come in capacities of 100,000 and 135,000 Btu per hr.

United States Air Conditioning Corp, 3300 Como Ave, Minneapolis 14, Minn.



WINDOW CONDITIONER P821

Fingertip control of cooling air features window air conditioner employing a 5-piece plastic assembly. These five pieces fit together to form the entire front of the conditioning unit, which measures 26 in. long by 12 in. wide. Three disks, with louvers set at a 45-deg angle and held in place by spring clips, mount in the front panel. These disks can be adjusted with the finger tip to distribute air in any desired direction.

Eye-appeal was kept in mind during the design stage; the assembly is styled in three shades of tan.

General Electric Co, 1 River Road, Schenectady 5, N.Y.

DEHUMIDIFIER P815

Plug-in type dehumidifier *Model DMS 4*, powered by a hermetically sealed compressor with a permanently lubricated fan motor, has an aluminum evaporator coil with extended surface. The condenser uses finned copper tubing. It can handle air flows up to 100 cfm in a compact packaged unit that measures 17 in. long, 13 wide, 15½ high. It uses 115-v 60-cycle, 2 amp.

Dehumidifier works on the principle of an electric refrigerator. The moisture-soaked room air is drawn into the dehumidifier by a fan inside it. This air then passes over the cold coils.

Abbeon Supply Co, 58-10—41st Drive, Woodside, N.Y.

VENTILATOR P130

Whirlout straight-through roof ventilator is available in a wide range of sizes and capacities. Ventilator is open only when its propeller fan is operating. Air stream holds two semi-circular halves of damper open while forcing unwanted elements out of building.

The Swartwout Co, Cleveland 12, Ohio

AIR DIFFUSER P809

High-pressure air diffuser, *Type HPC II*, handles air at high pressures and high velocities, permitting unusually small exposed ducts of uniform size. A smaller volume of air at low temperature provides a cooling effect ordinarily supplied by a greater amount of air at higher temperature.

W B Connor Engineering Corp, Shelter Rock Lane, Danbury, Conn.

DUCT INSULATION P160

Fiberglas vapor-seal duct insulation is designed to stop condensation on air-conditioning ducts that carry cool air in warm, humid areas. It is applied in a single operation. Efficiency is good. Insulation is furnished in 24x48 in. panels in thicknesses of ¾, 1, 1½ and 2 in. It is easily cut to any shape and may be painted, plastered over or covered with canvas.

United States Air Conditioning Corp, 3300 Como Ave, Minneapolis 14,

STEEL BLOWERS P126

Standard models, up to 200 hp, fabricated steel blowers put together with the latest continuous welding methods give considerable weight and space savings over the old cast blower construction. Three styles, models SG (multi-stage) and SM (single-stage) at 3500 rpm, and ST at 1750 rpm.

Billmyre Blower Div, Lamson Corp, Syracuse, N.Y.

COOLING TOWER P561

Compact double-flow *Aquatower* requires low pumping and fan power, has weight evenly distributed over wide area and has all parts readily accessible. Made in seven standard sizes, starting with a 50-ton unit. Available in all steel or wood with asbestos cement-board casing.

Marley Co, Inc, 222 W Gregory Blvd, Kansas City, Mo.

AUTOMATIC WATER COOLING UNIT AND BRINE CHILLER P1013

Industrial water or brine cooling units (3 to 150 tons) is entirely self-contained and is ready for operation when connected to water and power lines. One pushbutton controls a continuous, automatic supply of recirculated chilled water or brine at temperature and volume needed. Units are built in eight sizes with refrigerating capacities ranging from 3 to 150 tons. They include a high-head, high-volume water-circulating pump, storage tank and complete auxiliary equipment assembled on permanent steel skids that eliminate need of foundation or bolting down. Unit operates on either gravity or pressure water return without an additional pump and automatically adjusts to variable load and flow. Temperature range adjustable.

Mayer Refrigerating Engrgs, Inc, Rutherford, N.J.

HEATING-SYSTEM AIR VALVE P219

Measuring only ¾ x 1 in. this steam heating system air valve doesn't have small ports to clog, is quiet, inconspicuous, can be manually operated, is made in one size for all applications, can be installed in any position except upside down, and vents freely. Special composition disks permit air flow, stop steam.

Taco Heaters, Inc, 137 South St, Providence 3, R.I.

ELECTRIC SPACE HEATERS P454

Combined portable and suspension-type industrial heaters are available in 1500-, 3000- and 5000-w capacities with manual or automatic temperature control. They may be plugged in temporarily or mounted permanently wherever heat is needed. Heating element has no exposed hot wires or glowing coils. Heat is dissipated rapidly, giving high Btu output at low operating temperature.

Electromode Corp, 45 Crouch St, Rochester 3, N.Y.

POWER VENTILATOR **P313**

Designed for rapid localized removal of air contaminated with smoke, fumes, dust and heat, these units have capacities ranging from 5000 to 75,550 cfm. Dampers above fans open and close automatically as fan starts and stops.

Burt Mfg Co, Dept PO, 927 S High St, Akron 11, Ohio

CORROSION-RESISTANT DUCTS **P308**

Uscolite ducts are made of tough, corrosion-resistant plastic throughout. No other material is used, reinforcing ribs, joints and corners being extruded from plastic. Sheets form tops, sides and bottoms. Rivets are injection molded from the plastic while bolts are machined from extruded tube stock. Joints are solvent-welded with the same plastic in solution to form an airtight assembly.

United States Rubber Co, Rockefeller Center, New York 20, N.Y.

GAS-FIRED UNIT HEATERS **P133**

These compact and lightweight gas-fired unit heaters are offered in five sizes ranging from 65,000 to 165,000 Btu per hour input. Heat exchanger and burners are stainless steel for maximum resistance to rust and the acid action of corrosive gases. Dieformed heat-exchanger tubes are their own individual combustion chambers. Each tube is individually fired.

Modine Mfg Co, Racine, Wis.

PROPELLER FAN **P613**

Heavy-duty belt-driven unit is adapted to industrial applications, ductwork, filtering and other units where large volume of air is needed under static pressure. Propeller is cast aluminum, airfoil type. Sizes range from 24 to 48 in., capacities from 5000 to 28,000 cfm.

Chelsea Fan & Blower Co, Inc, 639 South Ave, Plainfield, N. J.

CABINET UNIT HEATER **P301**

Force-Flo heaters are designed for lobbies, entrances, showrooms and other locations needing a high volume of heat from an attractive source. Three new models of this six-unit line are the free-standing Type FG, semi-recessed Type SG, and completely-recessed Type RG. All three models have front inlet and outlet grilles for blanketing doorways or other areas where air must be discharged horizontally from the unit.

The Trane Co, La Crosse, Wis.

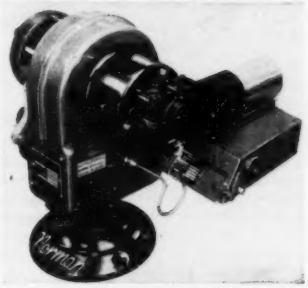
ELECTRIC COMFORT HEATER **P309**

Glareless all-metal electric heaters are suitable for local heating of men or equipment, either indoors or outdoors. Standard units are equipped with 6 in. of BX cable, a plug and two movable mounting clamps and bolts. Readily adaptable to many locations, heaters can be bolted alongside machines, on portable rigs or laid on floor to warm worker's legs.

E L Wiegand Co, 7731 Thomas Blvd, Pittsburgh 8, Pa.

BOILERS, STOKERS, OIL & GAS BURNERS

Dust collectors, blowers, refractories and other equipment dealing with steam generation



COMBINATION BURNER **P933**

Automatic gas-to-oil-and-back burner can be operated from an outside thermostat set at the temperature point at which the gas utility expects service difficulties. Burner can also change fuels automatically, depending on drops or rises in pressure of the gas line. The twin fuel burner is of great value to commercial installations faced with possible gas shortage and freezes. Seven sizes from 80,000 to 3,000,000 Btu capacity. The smaller sizes are stainless steel, and the larger ones use high-temperature refractories and heavy cast-iron materials.

Norman Products Co, 1150 Chesapeake Ave, Columbus, O.

PACKAGED BOILER **P554**

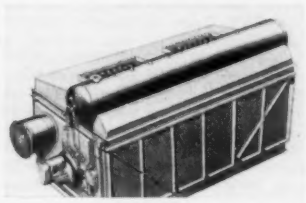
Self-contained, two-pass, scotch-marine-type boiler, the *Continental*, is available in sizes from about 350 to 17,500 lbs per hr (10-500 bhp). Burns heavy oil, light oil, gas or a combination at 80% efficiency or better. Steam output has less than 1% moisture content. Both front and back can be opened in 15-20 minutes for easy cleaning and servicing.

Boiler Engrg and Supply Co, Phoenixville, Pa.

CONDENSATION RETURN UNITS **P1204**

Motor-Mount unit returns to boiler condensate from steam coils, radiators and other steam-operated equipment. This is centrifugal pump with enclosed-type bronze impeller and stainless-steel shaft. Pump mounts on tank legs so no base is needed, and motor may be single- 2- or 3-phase, or dc, as specified. Both single and duplex units are available. Duplex serves excess loads and acts as standby pump. Single units include pump, motor, storage tank, suction piping, float switch and water-level gage; duplex units have two pumps and motors. Capacities from 2000 to 40,000 sq ft EDR.

The Deming Co, Salem, Ohio



PACKAGED BOILERS **P1232**

Two new packaged water-tube boilers are self-contained and ready to install. Can be mounted wherever load capacity of base is adequate. They fire either gas or oil. Capacities at 160 psi, model W-1, 4100 to 11,600 lb per hr, W-2, 11,400 to 23,500.

Among advantages are easy handling, low maintenance costs, speedy circulation of water and hence fast steaming.

Wm Bros Boiler & Mfg Co, Minneapolis 14, Minn.

DUSTFALL COLLECTOR **P862**

A directional dustfall collector provides an index of the general location of plants putting forth heavy dust materials into the air. The instrument is so set up that it collects dirt and dust from any direction the wind is blowing.

Eberbach & Son Co, Ann Arbor, Mich.

USE THE CARDS on page 155 to order more information

STOKER FEEDER **P826**

Slow-speed, 16-ft screw conveyor, ruggedly built, will supply fuels, including coal, wood chips, hog wood, etc, for stoker service in steam-generating boilers.

American Coal Burner Co, Inc, 18 (B) East Erie St, Chicago 11, Ill.

PACKAGED STEAM GENERATOR FIRED WITH GAS OR OIL **P335**

Fully automatic and self-contained, the *Continental* steam generator is easy to install, efficient, economical to maintain. One of the boiler's important features is that front and back can be opened in 15-20 minutes, providing ready access for interior cleaning and servicing.

Steam generator is ready to operate when service connections are made. It is available for use with heavy oil, light oil, gas or a combination, and in sizes from about 300 to 15,000 lb per hr for 15 to 200 psi. These cover a wide variety of industrial and commercial needs for heating and processing steam.

Continental unit is an improved 2-pass

version of the Scotch marine type boiler. Efficiency is guaranteed to be at least 80%, with steam moisture content under 1%. Operation of burner can be modulated from 35 to 125%, providing for periodic oversurge when required.

To assure maximum heat transfer and low flue gas temperature, all fuel is burned in the water-surrounded boiler furnace. Gases pass spirally through large 3-in. tubes. The 2-pass construction eliminates excess refractory, the only refractory required being at the back of the boiler.

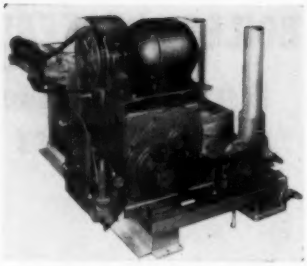
Dry pipe in boiler removes condensate from steam keeping moisture content low. In addition the steam tends to remain dry since a constant water level is maintained automatically. This steam generator is equipped with automatic controls plus rotary firing. The latter feature conditions the fuel and combustion air yielding a uniform fire with high radiant energy.

Boiler Engineering and Supply Co, Phoenixville, Pa.

PACKAGED BOILER P831

Completely assembled unit, the *Titosteam* packaged boiler, is finished, tested and certified at the factory. Its operation is fully automatic with all controls contained in a single pushbutton-controlled station. The generator mounts on a steel skid and can be installed on level and solid floors without foundation construction. When service connections are made to fuel, water, steam and electrical supplies, the boiler is ready for operation. No stack is needed; a vent through the roof is sufficient. Thermal efficiency runs not less than 80% for oil and 75% for gas firing.

Titusville Iron Works Co, Div of Struthers-Wells Corp, Titusville, Pa.



STOKER-DRIVE P1107

Accurate coal-feeding rate results from use of infinitely variable transmission on two *Coal Flow* stokers. Unit mounts above conveyor worm for greatest care in servicing and for safety in flood periods. Mechanism is said to be simple, durable. Has automatic overload device and torque indicator of spring-scale accuracy.

Iron Fireman Mfg Co, 3170 W 106th St, Cleveland, Ohio

ELECTRIC BOILERS P552

Two new models, *LP-1½* and *400-1½* complete the manufacturer's line of Speedylectric *Model LP* boilers. The new designs will use available 220-, 440-, or 550-v single-phase power. They are compact, 14 in. wide, 22 in. long, 28 in. high, and require 15-kw power input for maximum steam output.

Model 400—1½ is an ASME Code boiler carrying National Board Stamping & Insurance Co certificates for pressures up to 50 psi. Both boilers have Underwriters' listing. Automatic balanced control adjusts the current consumption to the exact amount required to maintain desired steam output, pressure and temperature.

Livingstone Engineering Co, 100 Grove St, Worcester 5, Mass.

FEEDWATER SYSTEMS P627

Compact, flexible feedwater system for any type boiler is made from a 4-kit assembly. Originally designed for the manufacturer's *Steam-Pak* generators, it was found capable of handling any condensate return problem. The 4-kit assembly consists of one each for make-up, heater, receiver and pump phases. Any individual kit can be purchased separately. System reclaims both high and low pressure condensate, maintains a constant, uniform water temperature to effect substantial fuel savings.

York-Shipley, Inc, York 4, Pa.

CONDENSATE RETURN SYSTEM P618

Twenty different size pumps to handle 3300 to 33,000 lb per hr of condensate are available in this system. Pressures range from 25 to 150 psi. Tank has convenient inlets for multiple return lines.

Stansbury Engrg & Sales, 53 W Jackson Blvd, Chicago, Ill.

REFRACTORY COATING P743

New liquid refractory coating dries to a diamond-hard finish that expands and contracts with the brick under heat conditions so it does not flake or crack off.

Power Chemicals Div, E F Drew & Co, Inc, 15 E. 26th St, New York 10, N.Y.

AIR COMPRESSORS and ACCESSORIES

CONDENSING FILTER P1214

Compressed air line filter, the *Airlenco*, also functions as condenser because of its extra size and extended surface. It has a steel outer shell, 6 in. dia; 36 in. long with a 5-in.-dia inner steel cartridge, 24 in. long, loosely packed with Fiberglas. A cast-aluminum head with inlet and outlet openings bolts to a flange welded on outer shell. Fiberglas baffles out any entrained moisture or oil as air passes through it. Only maintenance required is draining out the moisture collection from time to time.

Air Line Engineering Co, 4758 Warner Rd, Cleveland, Ohio

SMALL AIR COMPRESSORS P557

Units range from ½ to 5 hp, single and two-stage. Models include: bare compressor with flywheel on base with electric motor, on horizontal receiver with motor or gasoline engine, on vertical receiver, on horizontal receiver.

Features of receiver-mounted units include: safety and outlet valves, pressure gage and switch in a compact unit, large intake muffler with air filter, water-type valves, V-belt drive, controlled lubrication and cooling fins for compressor.

Schramm Inc, West Chester, Pa.

INFORMATION PLEASE!

Send in free cards on page 155 for additional data.

COMPRESSED AIR TRAP P1028

Water, oil, sludge and other foreign materials can be removed in a single unit, the *Condensifilter*, consisting of a dehydrating device, a mechanical filter, a self-purging trap. Unit measures 15 in. high by 9 in. dia. It has a capacity of 30 cfm at 100 psi and is recommended for purifying and dehydrating air used in combustion and process control.

Hankison Corp, 365 Renton Bldg, 1501 Beaver Ave, Pittsburgh 33, Pa.

All types of ELECTRICAL CONTROLS: Relays, motor starters, switches, etc.

MAGNETIC-DRIVE CONTROL P1101

Magnetic amplifiers adjust output speed of magnetic drives and hold it constant at any set value. Speed is adjusted by difference between a reference voltage, set by a potentiometer, and output voltage of a tachometer generator driven from output shaft of the magnetic drive. This difference is magnified by a 3-stage magnetic amplifier to adjust the magnetic drive field-coil excitation for the desired output speed.

A sensitivity of ±0.5% speed regulation is obtained through a current amplification of about 20,000 to 1. Anti-hunt and damping circuits prevent hunting while in stable-speed operation and overrun on speed changes. Control can be applied to magnetic drives on fans, centrifugal pumps, compressors and other applications.

Electric Machinery Mfg Co, Minneapolis 13, Minn.

TIME-DELAY RELAY P950

Silic-O-Netic time-delay relay, has only one moving part in the time element. It is hermetically sealed and never needs attention. Over-all dimensions of the entire relay are 1⅝x2½x¾ in. It is rated 10 amp at 120-v ac.

Heinemann Electric Co, 371 Plum St, Trenton 2, N.J.

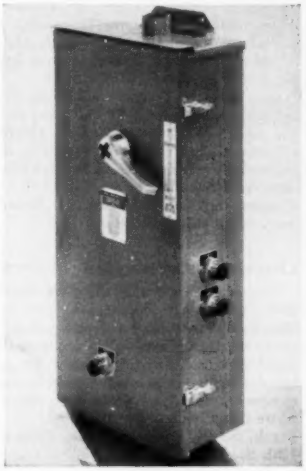
MOTOR CONTROL CENTER P239

Center for use wherever two or more ac motors, up to 200 hp, 600 v, are controlled from a central location.

Center is designed to withstand short circuit stresses up to 25,000 amp. Its sections, each measuring 20-in. deep, 20-in. wide, and 90-in. high, join together to form a strong, free-standing, completely dead-front, NEMA I enclosed, control assembly.

One of the main features of the new design is a 4-in. vertical trough (with cable supports) which runs the full length of each section, providing ample space for wiring.

General Electric Co, Schenectady 5, N.Y.



OUTDOOR MOTOR CONTROL P224

Rain-tight outdoor motor-control units originally designed for irrigation projects, yet applicable to many other outdoor motor-control jobs. Consist of a combination across-the-line starter with circuit breaker in a rain-tight enclosure, plus a built-in *start-stop* pushbutton or *hand-off-auto* selector switch. Sheet steel enclosure is Bonderized for maximum corrosion resistance, and is finished in gray enamel. Standard voltages are 220 and 440, 60 cycles, although with proper coils the starters are suitable up to 600 volts.

Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

ALL-MAGNETIC REGULATOR P1249

Dc power supply voltage regulator uses no vacuum tubes; is all-magnetic amplifier-type circuit. Maintains power supply output at 18-kv dc for load current variations from zero to 100 ma; line voltage variations from 105 to 135-v ac.

Regulation accuracy ± 1%. Time delay approximately 0.1 second. Easily and quickly modified for power supplies of any output rating.

General Magnetics Inc, 135 Bloomfield Ave, Bloomfield, N.J.

ELECTRICAL CONTROL P827

A resonant electrical circuit somewhat similar to a constant-voltage transformer involves three windings—a primary, a secondary, and a relay coil in series with a capacitor, which comprise the resonant circuit. The magnetic circuit consists of a closed core provided with a magnetic shunt.

Sola Electric Co, 4633 W 16th St, Chicago, Ill.

VOLTAGE REGULATOR P724

Latest development in connection with the *Regulex* rotating amplifier-type generator voltage regulator is the voltage measuring and control panel that has no moving parts or electron tubes. This static regulating equipment is built in standardized panel sections, which can be mounted either in a convenient cubicle or in switchgear units. It consists of a compensating unit for reactive current division, stabilizer panel, static voltage-measuring circuit, a battery excitation switch and resistor, and a damping transformer assembly, mounted from top to bottom in the cubicle.

Allis-Chalmers Mfg Co, Milwaukee 1, Wis.

VOLTAGE REGULATOR P103

More compact version of the *rocking contact* voltage regulator for small ac generators. Latest unit is available in two ratings, one with a 34-step commutator (Type V-00), the other with 50 steps (Type 221).

Regulator has been reduced in overall size, occupies less switchboard space.

Allis-Chalmers Mfg Co, Milwaukee, Wis.

MOTOR STARTER P110

Combination across-the-line motor starter with circuit breaker. Components are mounted *side-by-side*. Developed for use where this mounting is desired for reasons of space and arrangement. Starter has same self-indicating slamproof handle as the standard design with vertical-mounting.

Available in sizes 0, 1, and 2 in sheet-steel enclosures for NEMA Types I, IA, and V.

Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

MINIATURE SWITCH P534

Requiring space of 1¼x5/16x⅜ in. exclusive of terminals and terminal strip, miniature *Type E* switch will handle resistive loads of 10 amp at 125 v and 5 amp at 250 v ac. Contacts have positive wiping action making switch adaptable for tungsten-filament lamp loads. Terminals are integral with contact supports.

W L Maxson Corp, Unimax Switch Div, 460 W 34th St, New York 1, N.Y.

ILLUMINATION CONTROL P832

Simple, plug-in-type weatherproof illu-

mination control, *Model 1069*, provides completely automatic on-off control of artificial lighting at predetermined light level. It will function perfectly at temperatures as high as 140 F and down to minus 30.
Weston Electrical Instrument Corp, 641 Frelinghuysen Ave, Newark 5, N.J.

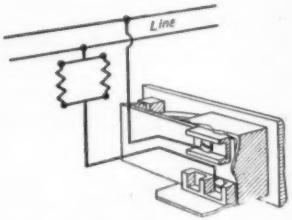
VOLTAGE REGULATOR P806

Redesigned line of single-phase voltage regulators in standard ratings of 9.6 to 24 kva widen the field of application for economic uniform voltage control with small regulators. They are available for single-phase circuits, 600 v and below, up to 1000 amp.
General Electric Co, 1 River Road, Schenectady 5, N.Y.

MOTOR WATCHMAN P108

NEMA size 0 and 1 manual motor starters with built-in indicating lights. Mounted in NEMA type I enclosures, and designated as class 10-100-SI and 10-100SOA.

An indicating light generally is used to show whether starter is ON or OFF, but it can be wired into circuit to indicate other conditions. Light can be provided for ac voltages from 110 to 600 volts.
Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.



RADIANT HEATING THERMOSTAT P128

Because radiant heating performs its work almost exactly opposite to the usual convection system, its controls should show this change in conditions.

Many conventional thermostats have their temperature sensitive elements shielded so radiant-heat pull from near-by walls won't distort temperature-effect of surrounding warm air. Because of this shortcoming the Mulvaney *Radiantrol* has been drafted for service with the new Continental Glass Heating Corp electric heating panels.

For comfort heating it controls room conditions through differential expansion between an aluminum front plate fully exposed to the room atmosphere, and invar control bars mounted between the ends of the front plate.

Relays and transformers are absent. This thermostat works right across the line, can handle up to 2000 watts.
Continental Radiant Glass Heating, 1 East 35th St, New York 16, N.Y.

Temperature, Pressure Regulators, and many other MECHANICAL CONTROLS

COMBUSTION-SAFEGUARD SCANNER P1132

Combustion-control system provides complete flame-failure protection for gas, oil, or pulverized-coal-fired furnaces. The new scanner sees all types of flames and gives quick and positive response to flame failure to protect against danger of explosions. Very compact, the scanner is installed in end of a standard ½-in. pipe nipple where it can see the flame area. It replaces both flame rod and photoelectric tubes.

Once installed, scanner requires no service other than keeping its lens clear so it can see. It discriminates between glowing refractories and live flame and will not respond to sunlight, artificial light, or other sources of radiation.
Combustion Control Corp, 77 Broadway, Cambridge 42, Mass.

LIQUID-LEVEL CONTROL P755

Torsion tube assembly transmits liquid-level changes and eliminates the need for objectionable packing glands and pressure-tight bearings. Type 888 displacement liquid-level controller is designed for external mounting on pressure vessels, kettles, receivers, separators and other devices where liquid-level control is needed.
Black, Sivalls & Bryson, Inc, 7500 E. 12th St, Kansas City 3, Mo.

TEMPERATURE REGULATOR P558

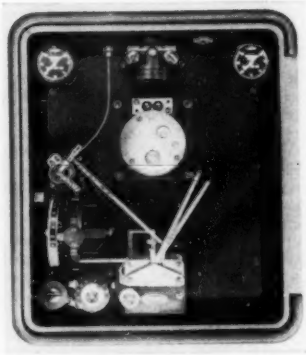
Type 1005 regulator is self-contained and pilot operated in sizes 2- through 4-in. It is available with 125 or 250 lb ASA flanges for steam pressures from 10 to 150 psig and for temperatures from 30 to 325 F. Adjustment range is 60 F.
Farris Stacon Corp, 627 Commercial Ave, Palisades Park, N.J.

REMOTE CONTROL P747

A master unit interconnects through two small tubes with a slave unit of a hydraulic remote-control system to give positive load-carrying ability in both directions. Special provisions allow for expansion and contraction of both fluid and metal under temperature changes so synchronization between master and slave units is not upset. This control assembly can handle up to 500 in.-lb or torque.
Superdraulic Corp, 14256 Wyoming Ave, Detroit 4, Mich.

PYROMETER CONTROLLER P527

Compensation for heat transfer lags is claim for direct reading, indicating pyrometer controller *Model 293 Capacitrol*. *On* and *Off* variations above and below preset control point are reduced by built-in straight-line control unit.
Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.



PNEUMATIC CONTROLLERS P503

These modern instruments are designed for precise control of pressure, temperature, liquid level or rate-of-flow. Types of control available include proportional, proportional-reset, on-off and differential-gap. Supplementary types are pneumatic-set, time cycle, differential and manual. Pressure ranges go up to 5000 psi, temperatures from —40 to 100 F, flow between 0-20 and 0-200 in. H_2O, liquid level up to 50 ft H_2O.
Mason-Neilan Regular Co, 1190 Adams St, Boston 24, Mass.

HEATING CONTROL P1231

Modulating, completely adjustable, heating system control, *Weather-Flo*, takes an outdoor weather reading and combines it with indoor temperature reading. Changes heat supply in anticipation of needs. Built-in fan or pump switch provides continuous regulated flow of heat. Gives constant, uniform heating level at desired temperature.
Automatic Devices Co, Inc, Western Spring, Ill.

PROCESS CONTROL P1110

Sensitive, instantaneous and accurate control of flow, temperature, pressure, liquid level by *Tel-O-Set* controller. Latest addition to series that now includes differential converter, *Tel-O-Set* indicator and recorder. Operates on pneumatic balance principle.
Minneapolis-Honeywell Regulator Co, Wayne & Windrim Ave, Philadelphia 44, Pa.

TEMPERATURE REGULATOR P733

Self-powered temperature regulator, No. 999, has press-formed frame of stainless steel to cut down heat conduction from the valve to the regulator head. This gives better control with less weight plus a reduction in over-all dimensions. An extra-

large 2-ply metal Sylphon bellows in the thermal unit provides added power for valve operation. Temperature ranges start at 40 F and end at 440. Available in valve sizes ½ to 4 in., inclusive.
Fulton-Sylphon Div, Robertshaw-Fulton Corp, Knoxville, Tenn.

SMOKE DETECTOR P209

Three-unit photoelectric smoke indicator and control, the *De-Tec-Tronic*, consists of (1) light source (2) photoelectric cell whose output is proportional to smoke density (3) master control with amplifier, relay, smoke-density-meter calibrated in Ringelmann units, and signal lights.
De-Tec-Tronic Laboratories, Inc, 1711 Terra Cotta Place, Chicago 10, Ill.

FUEL CUTOFF P1004

Heavier, float-operated, signal switch device operates on pressures from vacuum to 450 psi. The new device, *Levalarm EA-10*, has been redeveloped from a signal switch. It can serve as a fuel cutoff as well as a means of operating warning signals like bells, sirens or lights when liquid levels in small boilers or various special tanks reach predetermined low or high points.
Reliance Gauge Column Co, 5902 Carnegie Ave, Cleveland 3, Ohio

BIN-LEVEL CONTROLS P628

Heavy-duty and explosion-proof bin-level control switches have been added to automatic *Tellevel* line. The heavy-duty model serves where coal lump sizes run above ¾ in. It has a sturdy steel housing to protect the switch mechanism and a rubber cap at the housing base as a moisture and dust seal. The explosion-proof design works in hazardous areas where explosive vapors or dusts occur.
Stephens-Adamson Mfg Co, Aurora, Ill.

SMOKE INDICATOR P330

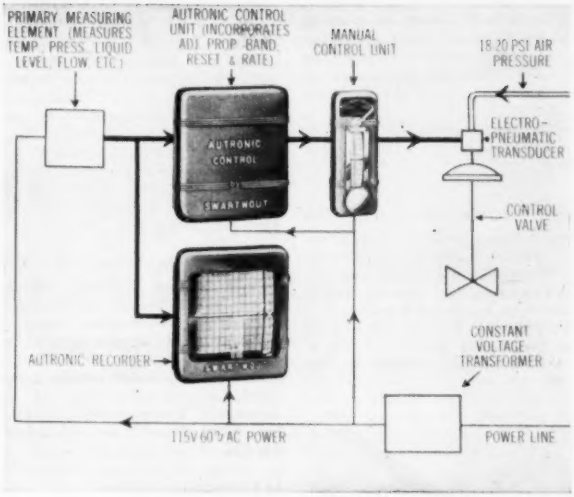
Photoelectric cell system gives constant check on smoke density. It consists of three units: light source; photo-electric cell whose output is proportional to density of smoke; and a master control with amplifier, relay, smoke density meter calibrated in Ringelmann units.

Light source and photoelectric cell units mount on opposite sides of breaching or smoke chamber, centered over two 2-in. holes in breeching walls. Both light source and photocell unit are spaced from breeching to permit natural air drafts to keep lenses cool and clean.

Master control, which may be located remotely, can be set for a pre-determined smoke density, with no further adjustment required. Indicator responds to any variation in smoke density. Standard units are available for either 110- or 220-v, 60 cycle.
Cleveland Fuel Equipment Co, 7316 Associate Ave, Cleveland 9, Ohio

TEMPERATURE MONITOR P1237

An electronic scanning system automatically and continuously monitors up to 270 separate processing temperature points. Records only temperatures that deviate beyond pre-set limit. Audible alarm permits immediate correction of excess temperatures, and replaces several instruments and time-taking logging operations.
Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Ave, Philadelphia 44, Pa.



MEASURING AND CONTROLLING PRESSURE LEVEL, FLOW P1236

Centralized-control, miniature, all-electronic system for measuring and controlling process variables like temperature, pressure, level and flow. *Autronic* control system has three basic units: primary sensing element, *Autronic* control unit, and final control element. Powered by 115-v, 60-cycle ac.

Primary sensing element generates voltage that is directly proportional to any change in process variable. This voltage, always within the same range, is transmitted to the *Autronic* control. Here it is continuously modulated by electronic means and resulting dc is transmitted to the final control element, which may be either electrically or pneumatically operated.
The Swartout Co, 18511 Euclid Ave, Cleveland 12, Ohio

WATER LEVEL ALARM P334

Designed primarily for high-pressure service, the *Hi-Lo* water alarm is dependable at all working steam pressures on both stationary and marine boilers. It uses no bellows, no diaphragms, no weights, no floats, no differential pressure devices. It has no internal parts to wear or corrode. Standard audible signal is a horn; standard visible signal, lights.
Northern Equipment Div, Continental Foundry and Machine Co, Erie 2, Pa.

GAS ALARM P208

Completely explosion-proof construction featuring a bell-shaped cover housing and weather-proof sensing unit, permits outdoor or indoor mounting of model EE combustible gas alarm. By convection and diffusion, the surrounding atmosphere is continuously watched for build-up of any kind of explosive vapor. Presence of such vapor lights a bright-red indicator and various remote alarm units that can be connected to special terminals.
Johnson-Williams Ltd, 2710 Third St, Palo Alto, Calif.

DRAFT REGULATOR P343

Unit is designed to increase gas-fired boiler efficiency, and eliminate many draft-related operating problems of commercial and industrial plants. Close regulation of drafts enables gas-fired boilers to be adjusted for greater operating efficiencies.

When installed on either new or old boilers, in place of the common diverter, the control eliminates many operating difficulties.

Designated as the *Field* type M-G double-acting barometric draft control, the unit mounts on the flue pipe or breeching. It has a sensitive gate which swings inward to provide accurate updraft regulation, and outward to provide immediate relief for down-drafts.
Field Control Div, H D Conkey Co, Mendota, Ill.

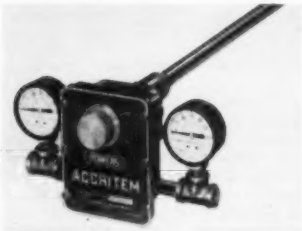
SERVOMECHANISM P231

Designed to remotely position a dial pointer, recorder, pen mechanical counter, printing mechanism, switch cam, pulley

wheel, gear train, etc with high accuracy. The *Atcotran Servo* employs an electrical null-balance differential transformer measuring system actuated by a two-phase low inertia motor. Continuous null-balance operation unaffected by line voltage variations of ± 10%.
Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

PYROMETRIC CONTROLLER P420

Proportioning, indicating pyrometric controller, Model *JP Gardsman*, automatically adjusts the ratio of power on-and-off, over a given time cycle. Maintains any desired temperature set by the index pointer. It is of special interest in extruding and industrial heat-treating fields.
Taco West Corp, 525 N Noble St, Chicago, Ill.



TEMPERATURE REGULATOR P1026

Expansion, stem-type regulator, the *Accritem*, maintains liquids or air at any desired temperature by controlling settings of pneumatic or water-operated diaphragm valves or dampers. It has a calibrated dial temperature adjustment in two ranges 50-250 F and 150-350 F, and operates under compressed air or water at 15 psig.
Powers Regulator Co, 3501 Oakton St, Skokie, Ill.

DUPLEX THERMOSTAT P903

Two-position control of motor-operated valves, relays, pumps and other heating-system components can be had with the new low-voltage, duplex thermostat. This device changes from one thermostatic element to the other by automatic time clock or manual switch. Stops inside the metal case permit setting limits or lock controls.
Barber-Colman Co, Rockford, Ill.

THERMOSTATIC CONTROL P539

Alarm and shutoff actions of *Thermoswitch* allow selenium rectifier units to operate at maximum efficiency without danger of overheating. Stack temperature, which is controlling factor in life of selenium plates, results from combination of current load, ambient temperature, length of operation, and ventilation efficiency. Sensitivity of thermostatic control units (± 0.1 F) insures rapid functioning and safe operation at peak efficiency.
Fenwal Inc, Ashland, Mass.

TEMPERATURE REGULATORS P550

Self-operated temperature regulators known as Type UBA, are packless, single seated, fully balanced, and hermetically sealed for reliable operation under the most adverse conditions. Visual control is provided by dial adjustment on top of regulator. Unit is available in ¼-, ⅜- and ½-in. sizes for steam pressure to 150 psig, and temperatures between 30 and 325 F with control acting over a 60 F range.
Farris Stacon Corp, 627 Commercial Ave, Palisades Park, N.J.

PRESSURE TRANSMITTER P1244

Explosion-proof diaphragm differential-pressure transmitter for determining level of catalyst in storage tanks, transfer bins and withdrawal drums. Installed in a hydrocarbon pilot plant, this linear transducer measuring system provides a remote visual signal instantaneously.
Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

ELECTRONIC TIMER P240

Time interval is continuously adjustable and accuracy is unaffected by supply voltage fluctuations. Cycle is initiated by a contact closure and SPDT relay is operated at end of the timed interval. From .05 to 20 sec intervals can be furnished. SPDT relay contacts are rated at 115 v, 5 amp, non-inductive.
Timetrol Co, P O Box 193, Rockford, Ill.

TO LEARN MORE ABOUT ANY NEW product, send in cards, page 155

MERCURY RELAY P347

Model EM-10 mercury plunger relay for three-wire operation. Can be used for lock-up relay service, off-on push button control and so on. When contact is made the input line connects to the two isolated circuits.
Ebert Electronics Co, 185-09 Jamaica Ave, Hollis, Long Island, N.Y.

LIMIT SWITCH P234

Rotating-type limit switch for use where reversing operation is co-ordinated with the number of revolutions of a motor shaft or driven equipment. Switch can be used to control motor-operated doors and windows, valves on machine tools, baling operations, travel limit on machinery, etc.
General Electric Co, Schenectady 5, N.Y.

TRANSFER SWITCH P1251

Alternate-contact-operating switch useful for machine tools; circuit transfer to timers and recording equipment; safety circuits; and as a limit switch. Operates so that first press transfers the contacts; second press restores them.
General Control Co, Boston 34, Mass.

ELECTRICAL EQUIPMENT

MOTOR STARTER P808

New ac part-winding-starter consists of two across-the-line starters and a pneumatic timing mechanism mounted below one starter and operated by the operator's solenoid plunger. Pressing the start button closes the first starter and energizes one of the two parallel windings. Meanwhile, the timer goes into operation, after a few seconds energizes the second starter. With both starters closed, full-line current is supplied to the motor through both windings, each using 50% of the current drawn.
Allen-Bradley Co, Milwaukee 4, Wis.

RESISTANCE DECREASES WITH TEMPERATURE P1258

Electrical resistance of *Thermistors* decreases sharply with increase in temperature. One grade for instance, has resistance of only a little over 1/100th ohm-inch at 600 F but 2000 ohm-inches at — 50 F. A second material ranges from 1/10th ohm-inch at 600 F to 20,000 ohm-inches at — 50 F.

Small in size, thermistors because of their unusual non-ohmic characteristics may be used to replace highly intricate apparatus. Since they are pure electronic conductors, either dc or ac may be used.
Carboloy Dept, General Electric Co, Detroit 32, Mich.

INDUCTION MOTOR P434

Cyclohm induction motor, model 3700, rated 1/25 to ¼ hp, features a resilient mounting base, lightweight and extremely quiet operation. Hysteresis-synchronous and normal-induction types in 2-pole versions, both single and polyphase available.
Howard Industries, Inc, Racine, Wis.

PORTABLE BRANCH- CIRCUIT EXTENSION P449

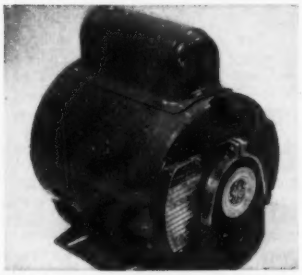
A series of portable branch-circuit extensions literally roll power, light, or heat to any location in industrial maintenance work, on temporary assembly lines, on construction jobs, or in underground construction and repairs. Known as the *NE Rolla-Duct* series, the units are collapsible and fully portable. Series includes a power and light unit, a strip of flood lighting and a strip of infra-red heating units.

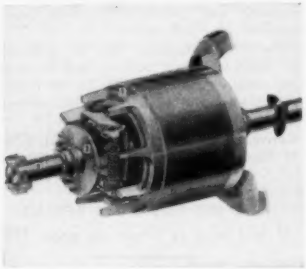
Strips are fully grounded and provided with a circuit breaker for worker protection. Carrying 21 ft of power line, the units are approved for 20 amp loads on 115- or 220-v operation.
National Electric Products Corp, Pittsburgh 19, Pa.

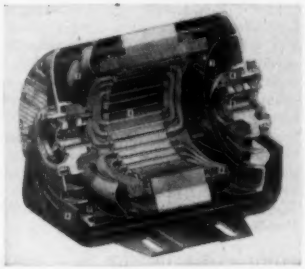
MERCURY LAMP P427

Producing 52,000 lumens at 1000 watts, this lamp was designed for industrial medium- or high-bay lighting. It has a life rating of 3000 hrs at five burning hrs per start,

SMALL, LIGHTWEIGHT, FRACTIONAL-HORSEPOWER MOTOR USES GLASS AND NYLON INSULATION







P422 • *Form G* motors illustrated are available in four types for various specific applications.

1. *Type K* (polyphase) delivers constant speed for all standard applications where two- or three-phase power is used—pumps, compressors, fans, blowers, etc.

2. *Type KC* (capacitor start) for domestic water pumping, dairy equipment, commercial refrigeration, air conditioning, motorized tools, etc, where high starting torque under heavy load is required.

3. *Type KH* (split phase) for fans, blowers, centrifugal pumps, oil burners, ironers, office appliances and other applications where moderate starting torque and quiet smooth performance are needed.

4. *Type KCP* (permanent split capacitor for shaft-mounted fans and blowers where quiet, multi-speed operation under constant load is required.

Light weight and small size are achieved by a balanced electro-thermal design plus more effective ventilation and generous use of aluminum for structural parts.

New insulation system withstands moisture, oils, mild acids, alkalies, and aging. A specially developed nylon material is used in slot and between-phase insulation and wedges; windings are Formex insulated wire; red Glyptal varnish is baked on entire stator assembly. Split-phase motors, requiring more heat-resistant material in starting winding, have glass-insulated wire for additional safety from burnout. Leads are of a new braidless neoprene that retains flexibility and insulating strength through years of service.

Improved double-end ventilation keeps the *Form G*, open drip-proof motor cool under continuous loads and prevents harmful accumulation of dirt inside motor. This general-purpose sleeve-bearing motor is recommended for all-angle operation, and can absorb moderate thrust loads.

General Electric Co, 1 River Road, Schenectady 5, N.Y.

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and 4000 hrs at 10 burning hrs per start. Operates satisfactorily in any burning position, and uses a 440-480v source.

Designated A15, the lamp has an overall length of 14¼ in.

General Electric Co, Nela Park, Cleveland 12, Ohio

PLASTIC-CASED BATTERIES P448

Lightweight plastic batteries for telephone installations, alarm systems, power plant control system and other applications where batteries are used for standby power. The line is available from 10 to 100 amp-hr at the 8-hr rate of discharge.

Gould-National Batteries, Inc, Trenton 7, N.J.

MERCURY SWITCH P941

Single-pole, double-throw type switch, 4-2 KRI, gives a mercury-to-mercury contact when the electrical circuit is cut off. Advantage of this contact is that there are no fixed metal points in the circuit to wear away.

General Electric Co, Schenectady 5, N.Y.

REVERSING DRUM SWITCH P1247

Bulletin 350, Style A drum switch is equivalent to a three pole double throw switch. It is small, simply designed—for machines and equipment requiring economical across-the-line starting and reversing switch for ac and dc motors rated at 2-hp or less.

Allen-Bradley Co, Milwaukee, Wis.

CIRCUIT BREAKER P233

New design of the *Magnette* panelboard circuit breaker makes it interchangeable with many other conventional breakers. Since it has no thermal elements, its rating is not affected by room or internal panelboard temperature. On simple overloads, breaker provides for a time delay; but at 10 times the rated current or short circuit conditions it trips instantly.

Heinemann Electric Co, Trenton 2, N.J.

SIGNAL AMPLIFIER P430

Regohm converts low-power-level signals into control signals of a much higher power level. Plug-in unit, *Regohm Size 3*, can be used in voltage, current or speed regulation. It is adaptable to servo systems, rotating machinery, line and load regulation, rectification, battery charging, saturable reactors, and close differential relays.

Electric Regulator Corp, South Norwalk, Conn.

SYNCHRONOUS MOTOR P1254

Motor operates on reluctance principle, has no brushes, slip rings, rotating coils or permanent magnet. Can operate continuously at any voltage below 250, either single phase or polyphase. For control system instrumentation, and industrial equipment.

Allis-Chalmers Mfg Co, General Machinery Div, Milwaukee 1, Wis.

SELENIUM RECTIFIER P428

Selenium rectifier cell has capacity to withstand 60 volts rms. operates in 1-ph bridge connection, air-cooled, 35 C ambient maximum.

Kotron Electrifier Corp, 99 Sussex Ave, Newark 4, N.J.

HERMETICALLY SEALED SELENIUM RECTIFIER P443

Metal encased and filled with inert gas, these rectifiers have standard tube terminals to fit standard sockets. All standard tube mountings are available. Unit No. W15CM is rated at 390-v rms input; 550-v peak inverse; 120 milliamperes, 160-v dc output at 35 C ambient. Half wave and bridge circuits are also available.

International Rectifier Corp, 1521 E Grand Ave, El Segundo, Calif.

VERTICAL MOTORS P1136

Solid-shaft, vertical capacitor motors feature in ratings from ¾ to 5 hp, and are an addition to the company's *Tri-Clad* integral-horsepower, single-phase motor line. These capacitor motors with squirrel-cage rotors have no brushes or commutators. They provide quiet operation without causing radio interference.

General Electric Co, 1 River Road, Schenectady 5, N.Y.

PLASTIC BLOWERS P1261

Plastics replace critical aluminum and bronze for blowers in small, totally-enclosed, fan-cooled ac motors. Plastic

blowers consist of a polyester-resin reinforced with glass fibers.

Plastic blower has many advantages. It is unaffected by chemical agents. Hence, it is desirable on motors used in refineries, chemical plants, and process industries. It is as much as 1/3 lighter than its metal counterparts. This reduces inertia. Blower has succesfully passed overspeed tests at four times normal speed. Currently used in totally-enclosed fan-cooled lifel-line motors in NEMA frames 254 and 284 (5 and 7½ hp, 1750 rpm).

Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

CORD AND PLUG SET P1246

Six-ft cord set has molded-on plug with special round pin to provide positive third-wire grounding. Grounding pin is integral part of the plug and requires no secondary operation of attaching grounding lead or strap.

General Electric Co, Construction Materials Dept. Bridgeport, Conn.

EMERGENCY LIGHT P327

This automatic emergency lamp gives light when regular power fails. Plugs into any 110 volt ac outlet. If there should be any interruption in the regular lighting circuit the GS No. 16 light will come on instantly and automatically, from power supplied by a dry battery.

Furnishes emergency light for operation of switches, valves, controls and for making repairs. Enables employees to remain on premises during a reasonable interuption.

General Scientific Equipment Co, 2700 W Huntingdon St, Philadelphia 32, Pa.

WILL GET YOU MORE DETAILS
if you send in cards on page 155

FLUORESCENT BALLAST P350

Sequenstart fluorescent ballast is designed for two-96T12 fluorescent lamps. It meets the Certified Ballasts Manufacturers' Supplement No. 1, to American Standards Assn Specification C82.1.

This ballast, catalog No. 608-408, improves on all advantages of conventional lag-lead ballasts. It is cooler, quieter, lighter, smaller, more efficient and less expensive.

Sola Electric Co, 4633 W 16th St, Chicago 50, Ill.

CATHODIC PROTECTION P717

A 3x60-in. graphite ground-anode for longer life; there are more pounds of graphite per unit of exposed surface. It is rugged enough to stand up under normal installation bumps without damage, is easy to transport to the field, easy to center in the backfill and easy to tamp.

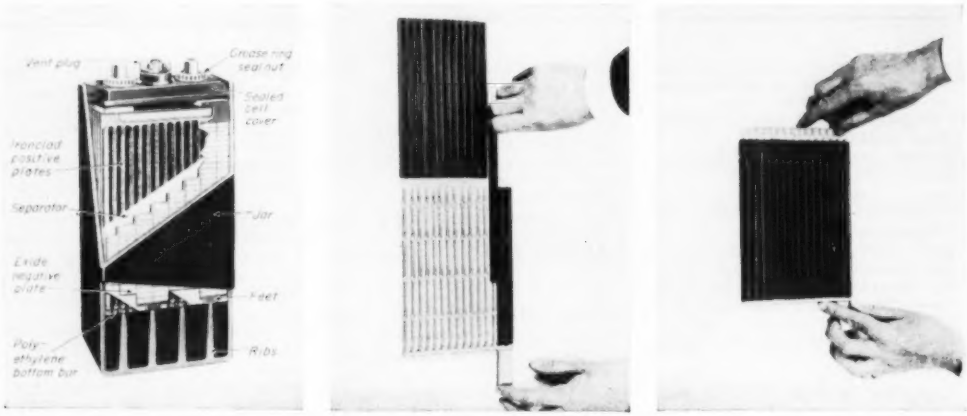
These units are recommended for cathodic protection of pipelines, tank farms, refinery equipment, ships, electric substations and all sorts of underground and underwater metal structures. They are furnished complete with 36-in.-long insulated No. 8 weatherproof cable.

National Carbon Co, Div of Union Carbide and Carbon Corp, 30 E 42nd St, New York 17, N.Y.

LINE STARTER P801

Improved starting and control of machine tools can be had with the new combination *Life-Linestarter* (Class 11-206-NJ). The starter enclosure, NEMA type 12, has a continuous neoprene gasket and mounts on external brackets. There are no knockouts or mounting holes in the box itself.

Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.



IMPROVED POSITIVE PLATE INCREASES INDUSTRIAL BATTERY LIFE

P548 • Positive plate of storage battery is all important factor in determining useful battery life. An improvement in positive grid construction of the *Ironclad* battery is made with the development of Silvium metal, an alloy of silver, lead and other components, that is highly resistant to corrosion.

The positive plate is different from all others. It consists of core rods inserted in slotted rubber tubes. Active material is then packed in the tubes surrounding the rods. Fine slots in the rubber tubes permit free access of electrolyte to the active material, but prevent it from washing out.

Previously, bottoms of the tubes were closed with an alloy bar. But after considerable service, due to corrosive action on the metal bar, some of the active material would seep out into the bottom of the container forming a sediment. This sediment represented lost capacity and life and also possible trouble from short circuits.

The second improvement in the *Ironclad's* positive plate is that the metal bottom bar is replaced by a polyethylene one that will be a permanent plug or tube sealer. It is permanent because it is unaffected by electrolyte or electrolytic action. The important result is that the positive active material is held in place for a longer working life.

Polyethylene is also an insulating material. It extends across the entire bottom of the plate and acts as a safeguard against shorts between plates. Elimination of metal at bottom of the positive plates assures better negative plate performance because of low local action and the reduction or elimination of shedding.

Electric Storage Battery Co, Philadelphia 2, Pa.

BATTERY CHARGER P947

Operated on the selenium rectifier principle, this charger, for industrial truck units up to 55 amp-hr capacity, is designed to simplify operation and prolong battery life. Automatic controller governs amount and time of charge. There are three simple steps; plug it in—set clocks—and throw switch.

Available for either lead-acid or nickel alkaline batteries.

The Yale and Towne Mfg Co, 11,000 Roosevelt Blvd, Philadelphia 15, Pa.

CIRCUIT BREAKER P725

Low-voltage air circuit breaker DB-50 features a completely new air-delayed series over-current tripping device with all elements completely adjustable, that provides long-time delay on overloads and instantaneous tripping of fault currents. For use on feeder and back-up breakers, overcurrent trip units including both a long-time and short-time delay element can be specified, thus providing for selective operation on fault.

Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

WIRE TERMINALS P805

Effective and economical method of avoiding short-circuit risks between closely spaced wires is claimed for the manufacturer's self-insulated *Sta-Kon* terminals. They are integral one-piece assemblies that combine a metallic grip-on wire and its insulation with a single staking operation. Terminal is insulated with nylon.

The Thomas & Betts Co, Inc, 46-A Butler St, Elizabeth, N.J.

SPECIALTY CAPACITOR P803

Development of a new, low-temperature *Pyranol*, a proprietary insulating oil, permits the use of specialty capacitors at temperatures down to —2 C. Specialty capacitors in this service show no loss in capacity, which means the same unit can be used not only for high and low temperatures, but also for indoor and outdoor applications.

General Electric Co, 1 River Road, Schenectady 5, N.Y.

ELECTRICAL TUBING P531

Silicone rubber coated fibreglas tubing is a class H product, and has exceptional flexibility and heat endurance. Will withstand exposure of 200 hrs at 200 C without embrittlement.

Irvington Varnish & Insulator Co, 6 Argyle Terrace, Irvington 11, N.J.

LOCKING CURRENT CARRIER P526

Hart-Lock connection locks in position by twist of the cap to prevent accidental disconnects. For long assembly lines, overhead connections, or wherever cords are subject to pull. Line includes assortment of 20 amp, 2-wire, 3-wire and 4-wire connector bodies; motor-plug flush receptacles; and regular, rubber, and armored caps with or without cord grips.

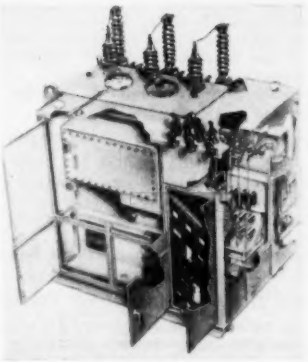
Arrow-Hart & Hegeman Electric Co, 100 Hawthorn St, Hartford, Conn.

TRANSFORMER UNIT P723

A number of improvements in the CSP line make the transformer simpler, smaller, and easier to ship and service. Number of doors and padlocks required to lock up the unit have been reduced so two padlocks now lock up four doors on front. The auxiliary compartment on the rear is eliminated. Potential transformers are now of the draw-out type to make fuse changing more convenient.

Arrester bracket is now welded to the tank on the high voltage side to lower the profile. This improves the appearance and makes the arrester more stable. Removable frame formerly required for shipping has been eliminated by building the braces inside. It is no longer necessary to store these frames in anticipation of future relocation of the unit.

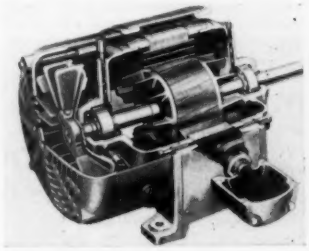
Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.



EXPLOSION-PROOF MOTOR P1037

Available from 3- to 75-hp, Types SE and SES carry the Underwriters' label in Class I, Group D (highly flammable gases and volatile liquids) and in Class II, Groups F and G (combustible dusts). Other types, SD and SS, without label, are also available for nonexplosion-proof services. Bulletin No. 1629 available.

U.S. Electrical Motors, Inc, 200 East Slauson Ave, Los Angeles 54, Calif.



BUS DUCT P114

Joint design in their feed-in duct makes it unnecessary to match left and right-hand duct ends. All ends are identical in construction. Duct is available in capacities of 600 to 4000 amp.

Square D Co, 6060 Rivard St, Detroit 11, Mich.

SAFETY SWITCHES P351

Complete line of safety switches that meet the recently adopted Federal specifications W-S-865. These switches vary in ratings up to 2400 amp, 600 v and 50 hp.

Square D Co, 6060 Rivard St, Detroit 11, Mich.

AIR-BLAST BREAKER P425

Unitype, air-blast breaker cubical switchgear is designed for both indoor and outdoor service. Factory assembled, completely wired units combine ease of inspection and maintenance, personnel-protection features, and freedom from fire and all hazards associated with oil-type switchgear.

Brown Boveri Corp, 19 Rector St, New York 6, N.Y.

ELECTRICAL CONDUIT P946

Dekoron coated galvanized electrical metallic tubing. Coating is corrosion resistant polyethylene. This coating is not substantially affected at room temperatures by concentrated hydrochloric, sulfuric or hydrofluoric acid.

Steel and Tubes Division, Republic Steel Corp, 224 E 131 St, Cleveland 6, Ohio

LOAD CENTER P1245

Two-circuit load center will continuously carry 100% of full rated load. It has a rated 55-amp main with a capacity of two 50 amp, single pole, 120-v ac magnetic circuit-breakers. Fully-magnetic action differs from all thermal devices—rated operation does not change with changes in temperature.

Murray Mfg Corp, 1250 Atlantic Ave, Brooklyn 16, N.Y.

ELECTRICAL TUBING P1259

Plastic-armored electrical metallic tubing for use where corrosive atmospheres necessitate frequent replacement of electrical conduit. A .020-in. coating of tough, corrosion-resistant vinyl or polyethylene plastic is extruded over standard galvanized

electrical metallic tubing. By varying thickness and composition of plastic armor, conduit can be given any desired dielectric properties.
Samuel Moore & Company, Mantua, Ohio

ELECTRICAL SHUNTS P106

Three sizes, MSA. MSB & MSC cover ranges from 30 to 1200 amp. Shunts are mounted on bakelite blocks for insulation to 1500 v; suitable for use with all types and makes of 50 mv meters.
Assembly Products Inc, Mail at Bell St, Chagrin Falls, Ohio

ELECTRICAL INSULATION P1036

Quinterra Type 3, an asbestos-base, silicone-treated, high-temperature electrical insulation is classified as Class H, for service at 180 C. Silicone-treated *Quinterra Type 3* is used for both inter-layer and wire wrapping insulation. It is adaptable to a wide range of electrical devices including air-cooled inert gas, and silicone-filled transformers. Some advantages it offers are savings on materials, a greater factor of safety and opportunity for more compact design.
Johns-Manville, 22 East 40th St, New York 16, N. Y.

VARIABLE TRANSFORMER P541

The *Powerstat Type 10* variable transformer is rated 120-v, 60-cycles, single phase input with an output of 0-120/132-v, 1.25 amp, 150/165 va, and is designed for 50, 100, and 150w applications. It is made for single hole mounting and has a projection on the base for keying to the panel. Compactness permits mounting under 3-in. chassis.
The Superior Electric Co, Bristol, Conn.

MERCURY-VAPOR LAMP P1041

A basically new light source, 400-watt J-H1 fluorescent mercury-vapor lamp, is designed to provide a whiter light from a mercury-vapor source. Bulb of J-H1 has an inside coat of a phosphor that fluoresces red when activated by invisible ultraviolet light generated by the quartz arc. This tends to balance the spectrum to provide a light white enough for most industrial purposes.
Westinghouse Electric Corp, Lamp Division, Bloomfield, N.J.

INSULATED TROLLEY SYSTEM P433

Insul-8 Bar trolley system consists of two units: (1) a sheath of insulation material, readily cut to any length, that snaps over the 8-bar conductor (2) a sliding shoe collector held against the insulated conductor by spring action, adjustable from 2 to 10 lb pressure. System is rated to 60 amps.
Benbow Mfg Co, 1285 Rollins Rd, Burlingame, Calif.

REFLECTOR LAMP P226

Two 500-w type R-40 reflector lamps, one a flood beam the other a spot, are made of heat-resistant glass. Faces are 5-in. in diameter; lamps have mogul screw bases.

Lamps were designed to simplify maintenance and provide a high light output for applications in outdoor industrial areas.
Lamp News Bureau, General Electric Co, Nela Park, Cleveland 12, Ohio

PNEUMATIC AND HYDRAULIC CABLE P556

Armortube cable is a flexible protected multi-tube transmission line for pneumatic and hydraulic control circuits. It is made of ¼ in. OD aluminum or copper tubing gathered in a slow continuous spiral similar to rope. Tube bundle is first wrapped in water-repellent insulating tape, then encased in heavy rust-resistant galvanized steel strip like that used for BX. Available in bundles of 4, 8 and 12 tubes, this cable transmits hydraulic control pressures up to 3000 psig and all ranges of pneumatic control pressures. Connections and takeoffs may be made in standard electrical junction boxes.
Bailey Meter Co, 1022 Ivanhoe Rd, Cleveland, Ohio

OUTDOOR SPOTLIGHT P1033

Spotlight providing 100,000 cp with a 300-watt rating. Unit is designed to concentrate its entire light output in a long-throw, oval-shaped, narrow floodlighting beam suitable for area protection lighting of railway sidings, switch and loading areas, shipyards, docks, air terminals and other industrial properties.
Stonco Electric Products Co, 489 Henry St, Elizabeth 4, N.J.

SMALL MOTOR P638

Wafer motor features an exceptionally short overall length. Well suited to applications requiring a totally enclosed, air-cooled unit with a flat design. Available in ratings from 1/20th through 5 hp and in speeds from 450 to 3,600 rpm, single- or polyphase.

For ventilating and air moving installations the motor is mounted within piping or vent. Frame design permits mounting (1) by means of "ears", (2) by drilled and tapped holes in endbells, or (3) by any other special requirement of the user.
Reuland Electric Co, Alhambra, Calif.

THERMOCOUPLE WIRE P709

Two-conductor, 24-ga copper-constantan thermocouple wire suitable for refrigeration applications has moistureproof polyvinylchloride insulation. Over-all dimensions are about 3/64x3/32 in. Temperature range is from —20 F to 225 F. Where no flexing occurs lower limit is below —30 F.
Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Ave, Philadelphia 44, Pa.

INSTRUMENT TRANSFORMER P523

Model 321 series *Donut* instrument current transformer is rated 2.5 va (NEMA Standards Capacity X), gives 1.2% accuracy at full rated capacity, operates in 25- to 133-cycle range, and is insulated for use on 2400-v rms service. Leads are 2 ft long and terminate with ¼ in. solder lugs. Leads are color coded for phasing.
Associated Research, Inc, 3796 W Belmont Ave, Chicago 18, Ill.

MERCURY LAMP P553

The first mercury lamp for general lighting service to have reflectors built into the bulb, these two 400-w lamps housed in the R-52 bulb never need cleaning or other maintenance. They have a life rating of 3000 hrs at 5 hrs per burning start, and 4000 hrs at 10 hrs per start.
General Electric Co, Nela Park, Cleveland 12, Ohio

KEY-OPERATED PUSHBUTTONS P431

Key-operated cylinder locks for oil-tight pushbuttons come in two basic types: (1) the selector switch, with either 2 or 3 rotary positions (2) the pushbutton type, that can be depressed in either full or intermediate positions.

Pushbutton type allows key removal in depressed and undepressed positions, similarly, the selector-switch type allows key removal in any position.
Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

ELECTRICAL INSULATION P102

Silicone resin coated *Novabestos* is only .003 in. thick. But it can be used at operating temperatures of 180 C, putting it in the category of Class H insulation. Composed of 97% pure asbestos and 3% organic material.
Irvington Varnish & Insulator Co, 6 Argyle Terrace, Irvington 11, N.J.

CLEAR PLASTIC-CELL STORAGE BATTERIES P439

Available in 2- and 3-cell sizes of 7 and 13 plates per cell, these *Exide* Type PLX batteries use clear polystyrene plastic containers and covers. They may be combined to supply any range of voltage with either 50 or 100 amp hr capacity at the 8-hr rate.

Maximum insulation between plates is assured by triple separation in the form of microporous rubber separators, slotted plate protectors, and *Vitrex* retainers.
Electric Storage Battery Co, Philadelphia 2, Pa.

HEAT EXCHANGE EQUIPMENT

LOW-TEMPERATURE COOLER **P1020**

Seven models of these low-temperature unit coolers using ammonia refrigerant and seven similar models using Freon are in production. Units are for applications needing below freezing temperatures like frozen-food storage, fur storage, meat packing, ice-cream plants, etc. Coolers are compact, may be used in multiple for greater capacity and provide rapid defrosting by water spray.
York Corp, York, Pa.

TANK PREHEATER **P119**

All-steel shell and coil assembly of liquid tank preheater for bulk storage, the *Hot Spot*, rests on bottom of the tank. Suction pipe and inlet and outlet pipes for heat, either steam or hot water, go through the manhole cover. Proper length inlet and outlet pipes fit any diameter tank. New model fits in 14½ in. dia manholes or greater. Completely tested with 400 psi air pressure under water before shipment.

Special flow accumulator causes the heavy oil or other liquids to flow over heated pipes before entering the suction line. Heating action raises liquids to proper flow temperature and thereby reduces suction-pump load.
Rempe Co, 340 N Sacramento Blvd, Chicago 12, Ill.

OIL PREHEATER **P1138**

Fully insulated built-in automatic temperature-control oil preheater uses electric circulation heaters for preheating bunker-C oils to about 170 F. The same packaged electric heater can be quickly connected for economic heating of large quantities of water. For this service, the same style heaters have different ratings—50, 75 and 100 kw. Heavy-steel-pipe housings enclose *Chromalox* heating elements. These elements have alloy sheath for most jobs, but are copper sheathed for water heating.
Industrial Heating Div, E L Wiegand Co, 7500 Thomas Blvd, Pittsburgh 8, Pa.

TUBULAR HEATER **P736**

Previous problems in electric heating, such as carbonization and other forms of fluid breakdown resulting from local overheating, are avoided, says the manufacturer, with its complete line of tubular heaters. This line provides a low-density electric heat for oils, tar, resins, and other viscous fluids. Heaters are installed without liquid joints, and internal heating element can be removed from tube enclosures at any time without draining fluid from the vessel.
Hynes Div, Martin-Quaid Co, 1893 Sedgley Ave, Philadelphia 32, Pa.

FUEL-OIL HEATER AND CONTROL **P404**

Paraprobe fuel-oil heater and control is designed to protect boiler from contamination by the heated fluid. Safety control is an electrical device that continuously monitors the condition of conductive fluids to detect undesirable contaminations. Exploratory electrode imposes a fixed low voltage on the liquid stream under scrutiny. If fluid is contaminated, control relay sounds an alarm. When used with oil preheaters, operation of oil burner and pump are also controlled. Safety control can be used in either below-the-waterline oil heaters or with steam heaters.
Davis Engrg Corp, 1064 E Grand St, Elizabeth 4, N.J.

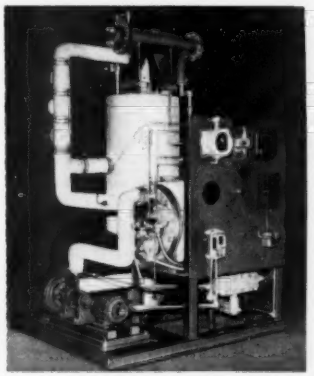
TELL ME MORE!
We'll ask the maker to send details. Just fill out cards on page 155

UNIT OIL COOLER **P810**

Compact nonferrous tube- and fin-constructed oil cooler has its cooling element supported by a special spring suspension to eliminate damage from expansion and contraction. Casing is welded steel construction for ruggedness and freedom from objectionable vibration and noise. A patented agitator is said to increase heat transfer between cooling air and oil by breaking up the oil flow in such a manner that it constantly wipes the tube surfaces for maximum heat transfer. Device is guaranteed for oil pressures up to 150 psi.
Young Radiator Co, Racine, Wis.

HEAT EXCHANGERS **P315**

For heating or cooling, these shell-and-coil assemblies have basic ratings from 98 to 1760 Btu per hr. They can be used for: (1) watercooled refrigeration condensers, converting air-cooled compressors to water-cooled, combined condenser and receiver, or (2) heating oils, chemicals or water with steam, and for other similar jobs. Body is ASME welded construction. Coil tubes are copper on all sizes except for oil treating when steel coil is used. All steel construction recommended for ammonia refrigeration service.
Rempe Co, 340 N Sacramento Blvd, Chicago 12, Ill.



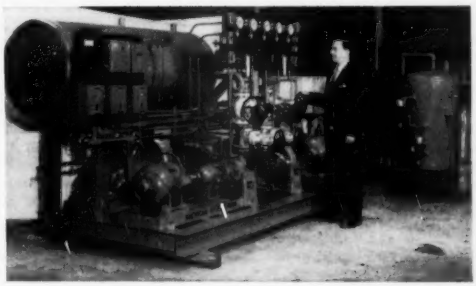
LIQUID HEATER **P1080**

Standard line of electrically heated *Dowtherm* heat-transfer units cover a range of capacities from 100,000 to 500,000 Btu per hr with temperature range to about 750 F. They use *Dowtherm* as a liquid or vapor medium. But other heat-transfer fluids may be used. Entire assembly can be base-mounted at the factory, or supplied with all essential equipment for field mounting.
Struthers-Wells Corp, Warren, Pa.

LIQUID-PHASE HEAT-TRANSFER EQUIPMENT **P131**

Offered as individual components or as "tailored" package units for smaller installations, this line of liquid-phase heat-transfer equipment operates at temperatures up to 800 F. Coal-, oil- or gas-fired boilers with capacities up to 20 million Btu per hour are designed for high circulation temperatures and high flow velocity to avoid overheating liquid transfer medium.

Special centrifugal pumps used are rated to 1600 gpm. Package units, mounted on a common frame, have electric heaters with 3 to 75 kw capacity. Or gas heaters with ratings of 250,000 to 1 million Btu per hr may be used. Package units may also be adapted for oil firing. Circulating pumps for these units have capacities of 1½ to 120 gpm, depending on size.
American Hydrotherm Corp, 33-70 12th St, Long Island City 6, N.Y.



MAINTENANCE & SAFETY EQUIPMENT

STANDARD WRENCHES P835

Complete line of company's standard *Proto* box wrenches, open end, and combination box-and-open end, were redesigned to improve efficiency, appearance, and ease of handling. For instance, the open end wrenches have narrower jaws to reduce the width of the pear-shaped heads and permit work in closer quarters. The edges of the shank have been well rounded and given a smooth flat surface.

Plomb Tool Co, Washington & Sante Fe, Los Angeles 54, Calif.

THREAD RESTORER P1027

Latest thread-restorer set, TR7, of the manufacturer has eight sizes of restorers, ranging from a bolt diameter of ¼ in. with 28 threads per inch to a ¾-in. bolt with 16 threads per inch.

Bonney Forge & Tool Works, 716 Meadow, Allentown, Pa.

LOW VOLTAGE ELECTRIC METAL SPRAYING P324

Up to 50 pounds of metal per hour can be sprayed with the *Schoop-Pistole* and temperatures up to 4000 C at the melting arc are available, according to *Corrosion* Magazine. This temperature is sufficient to fuse and disperse such hard metals as molybdenum, chromium, tungsten and their alloys and apply them to the desired surfaces. Temperature of the particles emitted from the arc are so high they will fuse into a glass or quartz surface forming a homogeneous, even metal film impossible to separate physically from the underlying material.

The inventor claims three times more by weight of zinc and aluminum may be deposited than with the gas-fired spray pistol.

The pistol consists essentially of two electrodes, the necessary electrical connections, + and −, and an air jet which blows through the arc created by the electrodes. Wires are fed by action of a 35,000 rpm turbine actuated by the air before impinging on the arc.

MU Schoop, Gladsbach Strasse II, Zurich 5, Switzerland

SMOKE DETECTOR P829

Designed for protection of spaces or hazards involving slow-burning or smoldering fires that generate too little heat to operate standard thermal or heat-activated detecting equipment, the *C-O-Two* smoke detector is a small chamber that contains photoelectric cells into which a constant stream of light is projected. Air samples from the protected area enter this chamber and if they carry any smoke, the smoke particles reflect light from the steam. This actuates a galvanometer-type relay to give off audible and visible warning signals.

C-O-Two Fire Equipment Co, U. S. Highway No. 1, Newark, N.J.

FIRE PROTECTION P911

Fire protection for handling and storage of flammable liquids can now be had with the new mechanical foam system developed by the manufacturer. Generally this system depends on normal plant water pressure to draw, mix and deliver the fire-extinguishing agent. In large installations where main pressures are not high enough, special pumping may be needed. The components of the foam are water, foam-liquid and air.

Walter Kidde & Co, Belleville, N.J.

SCREW DRIVER P742

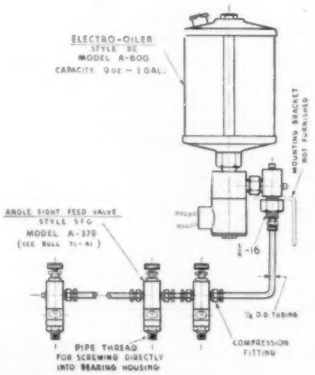
Pistol grip screw driver has been added to the ED portable electric-tool series. It is available in speeds of 500, 800 and 1000 rpm, in all straight and 25-deg-angle models, and 660 and 880 rpm in right-angle models with positive kickout and double slip clutches.

Independent Pneumatic Tool Co, 175 N. State St, Aurora, Ill.

HYDRAULIC PULLER P834

Versatile, effective, *Power-Twin* hydraulic puller has a capacity of 17½ tons and weighs only 10 lb. It features the center-hole design of the manufacturer so it can be adapted to all pulling systems now supplied by this concern.

Owatonna Tool Co, 378 Cedar St, Owatonna, Minn.



ELECTRO-OILING SYSTEM P444

Electro-oiling system, Style DEI, is a single line gravity feed system, entirely automatic in operation. It consists of a central reservoir with a solenoid-operated shutoff valve and a number of individual valves mounted directly into the bearings.

Copper tubing connects reservoir and all valves in series so that gravity flow will be maintained. A single reservoir will serve up to 24 bearings.

Oil-Rite Corp, 2378 Waldo Blvd, Manitowoc, Wis.

ELECTRIC HAMMER P737

Long-life electro-mechanical hammer has a special spring assembly that permits the *Kango* hammer pressure to bounce harmlessly between two springs whenever the hammer is withdrawn from work. This transmits only a slight tremor to the hammer body itself. The effect of the blows on the hammer body when the job is finished shortens the life of the usual electro-mechanical hammer.

Allied Tools, Inc, 321 Central Ave, Newark 4, N.J.

SAFETY SPOUT P1111

Safety air-vent pouring-spout fits any size carboy. Gives smooth, even flow without spurts or splashes. It is made of special acid-resistant rubber and plastic tubing with capacity of 5 gal per min.

General Scientific Equipment Co, 27th & Huntingdon St, Philadelphia 32, Pa.

TUBE CLEANER P814

Fastest, most economical straight-tube cleaner developed by the manufacturer, called *Model TP-301*, is lighter in weight than previous products, weighing only 15 lb; is shorter, 13 in. over-all; yet has increased cleaning capacity. It comes in sizes to handle from ⅜ up to 2½ or even 3-in. OD tubes.

Thomas C Wilson, Inc, 21-11—44th Ave, Long Island City 1, N. Y.

STEAM CLEANER P411

Heavy duty, portable, all-electric JC-50 *Speedylectric* steam-jet cleaner uses the steam-detergent cleaning principle. It operates with 200 psi cleaning steam and a 400 psi hot or cold water rinsing jet—all under fingertip control. The JC-50 requires 30-40 kw, 220, 440 or 550v, 3 phase power, and a water supply of 250-300 gph.

Livingstone Engrg Co, 100 Grove St, Worcester 5, Mass.

ELECTRIC HAMMER-DRILL P1034

Electromagnetic hammer-drill, Model No. 17-RO, for high-speed drilling in concrete, brick and stone. The No. 17-RO has a 1⅛-in. drilling capacity, weighs 21½ lb, and is available for operation from 110- or 220-v ac.

Syntron Co, 492 Lexington Ave, Homer City, Pa.

TABLET DISPENSER P1137

Sanitary, 95% glass and plastic, strong, foolproof salt-tablet dispenser provides 750, 10-grain salt tablets in easy-to-get-at form,

which help the worker reduce heat fatigue from loss of body salt.
General Scientific Equipment Co, 2700 W Huntington St, Philadelphia 32, Pa.

SOCKET WRENCHES P744

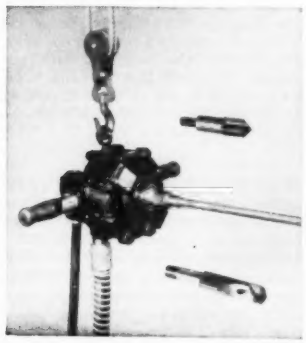
Single-hand tool fits smaller-size standard socket head screws and bolts. *Smitty Jr* has six individual socket wrenches, .05, 1/16, 5/64, 3/32, 1/8 and 5/32 in. that fold knifelike into a single handle.
H D Hunter Co, 3499 E. 14th St, Los Angeles 33, Calif.

FIRE EXTINGUISHER P822

Dry chemical, 4-lb fire extinguisher with a rubber hose is said to be easily operated, flexible in fighting overhead and ground-level fires, and to have a maximum extinguishing effectiveness for inexperienced operators. Its range is 12 to 15 ft. Dry chemical is ejected from the 4-lb extinguisher through a self-closing nozzle that produces a fan-shaped stream pattern under pressure developed by a 1½-oz carbon-dioxide cylinder in the dry chemical chamber. Each unit is subject to 600-psi hydrostatic test.
Ansul Chemical Co, Marinette, Wis.

VALVE-SEAT GRINDER P551

Portable valve-seat grinder is especially designed for large internal-combustion engines with inside seat diameters from 2 15/16 to 12 in. Unit can be used to grind both valve-seat faces and counterbores within the size range, and regularly holds concentricity to 0.003 in. It does in a few minutes what might take hours by ordinary reaming and hand lapping methods.
Thompson Products, Inc, 8354 Wit-Cox Ave, Bell, Calif.



CONDENSER CLEANER P413

Suspension-type condenser tube cleaner is designed for small, straight tube service. It has two new drill heads, special heavy-duty cleaner motor, improved control system. Assembly works from an overhead support—trolley, rope-block or hanger—and gets its driving force from compressed air or electric motor.
Lagonda Div, Elliott Co, Jeannette, Pa.

FIRE DETECTOR P1021

Detect-A-Fire gives an alarm at the moment air temperature around it reaches the value for which it was preset. Unit is mounted on the ceiling in a curved steel case, may be set up to 325 F, and can cover an area up to 625 sq ft with a single unit. It is repeatable, resetting itself accurately after each alarm. Carries U.S. Coast Guard and Factory Mutuals Laboratories approvals and is listed by Underwriters' Laboratories, Inc.
Fenwal, Inc., Ashland, Mass.

CONCRETE CUTTER P1003

Labor-saving, diamond-blade, masonry cutting-tool enables contractors or industrial plant maintenance men to actually saw patches, trenches or contraction joints in building floors and streets made of concrete or asphalt. For instance, concrete containing limestone aggregate can be sliced up to 10 fpm when cutting at a depth of 1 in. Specifications of the new blades are available for all types of aggregate and age of concrete.
Clipper Mfg Co, 2800 Warwick, Kansas City 8, Mo.

STEAM CLEANER P118

Ten times faster grease and dirt cleaning than with bucket-brush-and-scraper or hand-cleaning methods results from using model F-15, *Fireless Hy-Steam-Pressure Jenny*. Operates on any steam supply from 60 to 150 psi. Cleaner rolls on wheels; weighs about 240 lbs; measures 37 in. long by 27 wide by 37 high; furnishes from 45 to 90 gal per hr. After connecting to water, steam and 110 v 60 cycle ac lines, unit is ready to go to work.
Hypressure Jenny Div, Homestead Valve Mfg Co, Coraopolis, Pa.

T-HEAD SPRINKLER P1015

This sprinkler is designed for fixed piping systems. It has a directional wide angle, medium velocity discharge, and is installed in a pendant position. Water discharge opening is full-size. Water discharged is broken into a fog pattern fine enough to completely fill the area from the ceiling down to the floor. Fog is heavy enough so particles reach any fire on the floor.
Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.

TUBE BENDER P310

This two-piece unit bends both ½ and ⅝ in. OD copper, aluminum, brass and other soft thin-wall metal tubing. Dual-size shoe and mandrel permits two different tubing sizes without changing parts. Bends can be made to any angle up to 180 deg. Calibration shows degree positions.
Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.

LAMP LOCK-GUIDE P1238

Lok-Gyde for fluorescent lamps performs two functions. It channels the terminal pins into the sockets in relamping, making lamp replacement a one-hand job. It then locks lamp in sockets.

Device reduces time required for lamp replacement, minimizes hazards of relamping, and guards against danger of lamps falling if dislodged by vibration. Attachment is quickly slipped over any standard 15- to 40-w fluorescent socket.
Edison Electrical Co, 355 Weybosset St, Providence 3, R. I.

PULLER CONVERSION P902

Screw-operated bearing, wheel puller can be adapted to work on the company's new *Power-Twin* hydraulic puller. The set *Y-150*, consists of a *Y-17*, 17½ ton *Power-Twin* ram and pump assembly plus adapter parts.
Owatonna Tool Co., 378 Cedar St, Owatonna, Minn.

PORTABLE TOOL P1025

Easily moved, sturdy, welded-steel constructed device carries hydraulic pulling system for bearings, pulleys. The OTC *Hydra-Tote* stands 32 in. high, 36½ long, 16 wide at the base and 4 in. at the top.
Owatonna Tool Co, 378 Cedar St, Owatonna, Minn.

AUTOMATIC LUBRICATOR P237

Sight-feed lubricator that assures adequate lubrication of tube cleaners and other air- or steam-powered tools. Once set, this lubricator requires no adjustment—no turning on or off. Actuated entirely by pressure of the operating air or steam, not by flow.

As long as pressure is supplied, oil is accurately metered into the operating hose. When operating pressure is off, oil flow is shut off tight.
Elliott Co, Roto Div, Newark, N. J.

MAINTENANCE TOOL P912

Heavy-duty, universal, electric *Impactool*. Size 34 U has a 1-in. square drive and is rated for bolts up to 1 ¼-in. The device converts the power of an electric motor to hundreds of rotary impacts, which can quickly run nuts up tight or remove the most stubborn or rusted ones. It measures 10 9/16 in. high, 4¾ in. wide and 14¼ in. long, excluding the adjustable grip handle, which can be attached in any one of three positions or removed entirely. The other handle with a trigger switch may also be rotated 180 deg.
Ingersoll-Rand Co, Phillipsburg, N. J.

METALLIZING GUNS P1215

Patented jet siphon in gas head of two new 4¾ lb metallizing spray guns automatically compensates for gas-pressure variations as high as 10 lbs and gives steady, unvarying flame to produce uniform coating at low cost.

Type 4E sprays all wires from 20 B&S gage to ⅛-in. dia in any metal 40% faster than do previous models. Type 5E is first gun specifically designed for high speed spraying of softer metals like zinc and aluminum.
Metallizing Engineering Co, Inc, 38-14 30th St, Long Island City 1, N. Y.

POWDER METALIZER P908

Light, powder-metalizing unit, the new

Sprayweldor, for applying uniform overlays of Colmonoy hard-facing alloys to base metals has an eye-level air gage, large air filter, positive air and powder control valves, a fingertip trigger control for continuous or intermittent spraying.
Wall Colmonoy Corp, 19345 John R St, Detroit 3, Mich.

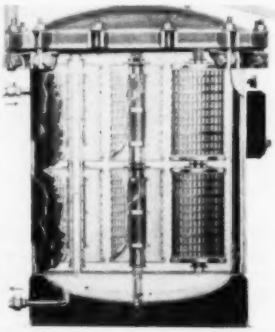
POWER TOOL P939
A cartridge-powered tool, readily operated by one man and weighing about 5 lb, can operate at sustained speed of 5 or more stud settings a minute. Studs vary in length from ⅝ to 2¾ in. long and are made of specially developed steel alloy to resist shattering when driven.
Remington Arms Co Inc, Bridgeport, Conn.

UNIVERSAL GEAR HOBBER P206
Spur, spiral and worm gears can be cut by *Cima* gear-hobbing machine employing *climb-cutting* method. Chip produced in climb-cutting is thick on top and thin on the bottom, quite different from conventional down-feed method. There is much less material to be removed at the bottom of the cut, and a much better tooth flank finish result. Feed per hob revolution can be safely increased without impairing finish or tooth accuracy.
Geo Scherr Co, 200 Lafayette St, New York 12, N. Y.

OIL-PURIFYING UNIT P1045
Purivac consists of two purifiers, heat exchanger, dehydrating and degasifying unit, electrical control panel, pumps and motors. Dual-purification units may be operated separately, in parallel or in series as desired. Purification, dehydration and degasification of insulating oil can be performed either in the field or at a central station. In the field they can be connected directly to the transformer and operated while it is in or out of service.
Honan-Crane Corp, 200 Superior Ave Lebanon, Ind.

TUBE BENDER P221
This tube bender is hand-operated and makes offsets and bends up to 180 deg in ⅜, ½ and ⅝ in. OD K and L copper tubing, brass, Bundy weld, steel and other light-gage tubing. Model 1200 has no loose parts, combines all three sizes in the one tool. Bender is handy for refrigeration, radiant-heating and other bending jobs.
Tal Bender, Inc, Milwaukee 2, Wis.

OIL CONDITIONER P711
Unit is specifically designed for small-batch clarification of used hydraulic, lubricating, run-in and transformer oils. Both insoluble and soluble impurities are removed by unit combining a cartridge filter for removal of metal, gums, tars, residues, soot, carbon, dirt and sand, and a vaporizer for extraction of free and emulsified water, fuel dilution, air, gases, etc.
Filtration Div, U.S. Hoffman Machinery Corp, 219 Lamson St, Syracuse 6, N. Y.



OIL FILTER P1250
Improved units include swingbolt head constructed for quick opening of filter covers and a lifting device for ease of handling the cover. Filters are available using factory-made throw-away cartridges or repackable type that operator repacks from bulk supply.
Hilco filters are available in capacities ranging from ½ gpm up to 1000 gpm, for fuel oil filtering, lubricating oil bypass, or full-flow filtering.
Hilliard Corp, 159 W Fourth St, Elmira, N. Y.

MAINTENANCE MATERIALS

END SEAL P925
Inexpensive moisture seal for terminating multi-conductor, sheathed-cables has a cone shape to receive filling compounds. Easily and quickly slipped over the cable to eliminate the need for friction tape or makeshift winding. It is applicable to cable diameters from ¾ to 2 in., and snugly fits over the cable sheath to prevent compound leakage. The compound hardens to form a permanent moisture-proof seal and keeps the conductors properly spaced.
Okonite Co, Passaic, N. J.

MECHANICAL SEAL P1135
The high heat resistance and extremely low friction and chemical inertness of *Teflon* is used by the manufacturer in developing the Type 9 mechanical shaft seal. This seal, designed for rotating shafts such as centrifugal pumps, turbines, agitators, was constructed in the end-face sealing principle. It can be employed at temperatures in the steam, water, etc that do not exceed 500 F.
Crane Packing Co, Dept 3.22, 1800 Cuyler Ave, Chicago 13, Ill.

WIRE ROPE LUBRICANT P243
Because of its unusual penetration and adhesion properties, Texaco *Crater A* permits application to wet wire rope. This new formulation achieves greatly improved wettability while retaining all the desirable characteristics of previous Texaco *Crater A*.
Field tests on cables in use on dredges and cranes indicate that the compound is especially valuable for use in severe weather conditions. Also where the wire rope is wet when the lubricant is applied, or where cable is subjected to abnormal water conditions in use. It is a thin liquid product which is applied without heating.
The Texas Co, 135 E 42nd St, New York, N. Y.

PROTECTIVE COATING P1230
Fast drying, protective coating, *Tarlac*, results from breaking down coal tar pitch into minute particles, then combining with water and a stabilizing emulsification agent. Forms a permanent suspension that can be brushed or sprayed. Does not crack at low temperatures or run at high temperature.
FlashStone Co, Inc, 30 E Rittenhouse St, Philadelphia 44, Pa.

HIGH TEMP GREASE P453
New grease exceeds established military and industrial standards in giving unusual protection at temperatures up to 300 F for continuous operation and 350 F for intermittent operation. Texaco high-temp grease is the latest formulation in a premium line which has been marketed for many years. This grease has excellent oxidation resistance, and similar desirable characteristics for high temperature work.
It far outran the hours-to-failure criteria of normal tests at 300 F and continued to exceed test specifications at even higher temperatures. An unusual characteristic of the new grease is the efficiency of its performance at high speeds as revealed in special ultra-high-speed endurance tests developed at Texaco's Beacon Laboratories. Water resistant characteristic makes it ap-

plicable in operations where long retention of grease and resistance to washing out are factors.

The Texas Co, 135 E 42nd St, New York, N. Y.

ELECTRICAL TAPE P232

Heavy-duty plastic electrical tape designed for applications where more-than-average mechanical strength is needed. Designated *Scotch* brand electrical tape No. 21, it is recommended for anti-corrosion protection for pipes, cables and equipment aid underground where resistance to cuts and abrasion by rocks during back-fill is important.

Also recommended for protecting and insulating cable and high tension leads subject to wear, abrasion and rough handling, and for bus bars carrying high voltage. Tape has a black, vinyl plastic backing that is 20 mils thick—more than twice the thickness of previous tapes of its type. It has a dielectric strength of 22,500 v, an insulation resistance of 200,000 megohms, and an electrolytic corrosion factor of 1.0. Tape is available in 36-yd rolls ranging in widths from ¼ to 16 in.

Minnesota Mining and Mfg Co, 900 Fauquier St, St. Paul 6, Minn.

NEED MORE DATA?
Fill out and send in cards from page 155

HEAVY-DUTY PRIMER P1223

Rust-inhibitive *Prufcoat* Primer P-50 is heavy-bodied, oil-modified synthetic resin vehicle that carries high percentage of inhibitive pigments, principally zinc chromate. Dries overnight and is easily applied even to seriously corroded metal surfaces.

Prufcoat Laboratories, Inc, Cambridge, Mass.

HIGH TEMPERATURE COATINGS P120

Longer life for ceramics, refractories, metals working in high combustion gas atmosphere depends on protecting them against penetration and destruction of their surfaces by hot corrosive gas. *White-ho* for temperatures up to 2840 F or *Pyrochrome* up to 4000, paints applied to the surface are said to resist this action. Further they are said not to peel, crack or blister and to expand and contract like the material they cover.

Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.

RUST-PREVENTIVE PAINT P317

Rust Inhibitor No. FD-425 dries in 10 min, one coat providing excellent hiding of old metal surfaces. Paint will withstand temperatures from −100 to + 250 F, resists salt air and fumes. It may be applied to damp surfaces, interior or exterior. Semi-gloss finish; various colors obtainable.

United Laboratories, Inc, Cleveland 12, Ohio

PROTECTIVE WRAPPING P117

Unfinished ferrous metal parts can be left overnight and weekends fully protected from rust. All that needs be done is to line the storage bin with *Vapor Wrapper*, a rust-inhibiting paper impregnated with *Callex*, a volatilizing chemical that inhibits moisture-action. A covering sheet over the bin seals in the air so chemical's power is not dissipated.

Nox-Rust Chemical Corp, 2425 S Halsted St, Chicago, Ill.

PIPE CEMENT P304

NervaPlast is a patented compound of rubber and selected asphaltic hydrocarbons. On drying it forms a tough, resilient, unbreakable elastic film suitable for use on insulated outdoor pipelines and equipment. Cement is cold setting, impervious to water and moisture vapor penetration. Pipe corrosion is prevented by the film. It may be applied to aluminum foil, Fiberglas fabric, Foamglas and 85% magnesia insulation. On some jobs a coat of *Nerva-Plast* applied to outdoor pipe and equipment is enough to provide needed weatherproofing and waterproofing. Or *Nerva-Strat Seal-Pruf*, Type-60, a flexible and highly waterproof rubberized sheet is wrapped around the material to be insulated and coated with *Nerva-Plast* cement.

Rubber & Plastics Compound Co, Inc, 30 Rockefeller Plaza, New York 20.

SURFACE HARDENING P1024

Quick, safe, surface hardening by an ordinary welding torch can be carried out with two new compounds, *Instant Hardener, No. 1 and No. 2.* All that need be done is to heat evenly the metal to be hardened with a welding torch. Dip into a container of the hardening compound. Withdraw and reheat. Then quench. No. 2 hardener is strengthened with small, hard facing particles mixed right into the compound.

Eutectic Welding Alloys Corp, 4040 172 St, Flushing, N. Y.

TEFLON PACKING P403

Flexrock No. 401 teflon-impregnated braided-asbestos packing can't be attacked by nor contaminate any industrial acid, alkali or solvent. It allows free shaft or spindle operation at all times at temperatures from −100 to + 500 F. Packing is furnished in continuous lengths of square cross section in sizes from ⅛ to 1 in. by 1/16-in. increments.

Flexrock Co, Mechanical Packing Div, 3670-A Cuthbert St, Philadelphia 4, Pa.

MULTI-PURPOSE GREASE P244

For use in general industrial applications, Texaco *Multifak 2* Grease is recommended for use in situations which require one high-grade multi-purpose grease for a variety of operations. *Multifak* has excellent shear stability, outstanding resistance against water washing, and good pumpability at low temperatures.

It is highly suitable for bearing lubrication over a wide range of temperatures and can be used efficiently for an extensive variety of industrial lubrication jobs.

The Texas Co, 135 E 42nd St, New York, N. Y.

CORROSION PREVENTION P1227

Slightly volatile amine nitrate crystals, known as VPI, give off vapors that reach all surfaces of a metal by convection and diffusion. They condense, providing a thin layer that protects metal against the corrosive action of air. For best application metal parts to be coated should be placed within two feet of the powdered VPI and inside a closed area.

Shell Oil Co, 50 W 50th St, New York 20, N. Y.

HAND-HOLE GASKETS P738

Designed for surfaces that are rough or uneven, and subject to considerable expansion and contraction, the *Pars* asbestos gasket holds steam, air, water, ammonia, and various other acid and alkali chemicals. Standard sizes have flanges 3/16 in. thick and 7/16 in. wide, and inside diameters from 2½ to 18 in.

Lawton H Parsons, c/o J P Eldridge Advertising Co, 1015 Packard Bldg, Philadelphia 2, Pa.

ANTICORROSIVE AGENT P817

New anticorrosive agent, *Corrosanti*, in four grades, is a boiler and metal protective, which reacts upon the metal treated and not upon the water surrounding the metal. *Grade A* is for boiler metal surfaces, and *B* is for protection of ferrous metals subject to deterioration from water and water vapor. *Grade C* is designed to protect surfaces subject to acids and other highly corrosive vapors and gases. *Corrosanti Special* is meant for ferrous surfaces subject to temperature of 900 F.

Dr Albert Schor, 52 Cambridge St, East Orange, N. J.

GAGE-GLASS GASKET P1210

Red-rubber gage-glass gasket is designed for extreme temperature and working pressures to 600 psi. Fits all water-gage stuffing boxes where round tubular glasses are installed. Has many other applications. Gasket won't blow or soften.

Ernst Water Column & Gage Co, Livingston, N. J.

FABRIC TUBING P212

Vinyl plastic coating to give good abrasion resistance for rough handling, plus inertness to chemicals and oils are features of *Spiratube* flexible fabric tubing.

Basic patented construction principle consists of preformed, continuous, spring wire ribbing, overlapped with spirally-wound woven fabric of several alternate types.

B F Goodrich Chemical Co, 324 Rose Bldg, Cleveland 15, Ohio

ELECTRICAL TAPE P944

Tape made with *Koroseal* material. Adhesive is nontransferring and can be pressed repeatedly onto a dry surface without losing its stickiness. It will not transfer the adhesive from the face, lose its tackiness, or ability to adhere. Tape sticks snugly and securely to itself and insulation around copper wire.

B F Goodrich, Akron, Ohio

MATERIALS HANDLING } Items about conveyors, feeders, hoists, lift trucks, vibrators, and similar equipment

BELT CLEANER **P1006**

Self-aligning, spring-steel wiper blade, set perpendicular to the conveyor belt surface but diagonal to belt travel, wipes belt clean and dry as it passes. Spring arms supporting the blade maintain a uniform pressure on belt and allow the blade to ride easily over belt obstructions like splices. Dribble from the cleaner falls directly to the rear of the discharge chute at the head end of the conveyor.
Stephens-Adamson Mfg Co, Aurora, Ill.

TRAINING ROLLER **P125**

Ready response to any shift of a conveyor belt off dead center gives this set of training rollers ability to tilt the carrier into an angular position with respect to belt travel. Tilt is enough to return the belt to dead center and carrier resumes its normal position. For best results these rollers are installed every 50-100 ft.
Stephens-Adamson Mfg Co, Aurora, Ill.

CINDER CRUSHER **P626**

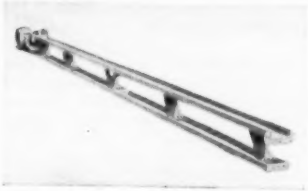
Special 3-roll cinder crusher speeds up job of crushing boiler furnace cinders to a suitable size for quick disposal to concrete block plants. It produces 15 tons of — ⅜ in. and up to 50 tons of — ¾ in. cinders per hr handling entering pieces up to 6 in. A large hopper and enclosed rolls prevent spillage, and direct material to crushing rolls. There are designs for permanent mounting or portable service.
Eagle Iron Works, 129 Holcomb Ave, Des Moines, Iowa

COAL THAWER **P940**

Portable coal-thawing tube operates with compressed air from 40 to 120 psi as atomizing medium for oil entering the burner equipment. The burners, venturi suction type, are placed the length of the thawing tube. These thawing tubes are set on runners 7 ft 3 in. long, 13 in. high and 10½ wide, and are fitted with a heavy-steel pulling eye. Each burner has a capacity of 18 cfm and a range of burning from 1½ to 6 gal per hr of kerosene or distillate-fuel oil.
Hauck Mfg Co, 124-136 Tenth St, Brooklyn 15, N. Y.

OSCILLATING CONVEYOR **P919**

An oscillating trough conveyor handles many kinds of loose materials, such as



food stuffs and chemicals where cleanliness, contamination or corrosion is a factor. Also hot, sharp, jagged or oily material, like steel chips and turnings are handled with practically no wear on metal trough. Escape of dust or gas is prevented by a metal cover and flexible connection at loading and discharge points.

A one-piece metal trough is supported on simple one-piece flexible members which act as springs. The trough is oscillated by a roller-bearing constant-stroke eccentric. Troughs are normally 4 in. deep, and are made in standard widths of 8 to 24 in. of No. 10 to 12 gage steel, corrosion-resisting steel and other materials in lengths up to 100 ft. Dividers can be put in the troughs to convey several materials at the same time. Discharge is possible at any desired point. Bulletin No. 2378 available.
Link-Belt Co, 307 N Michigan Ave, Chicago 1, Ill.

"EVERY TIME SHE GOES BY, OUR TEMPERATURE RECORDERS START ACTING UP!"

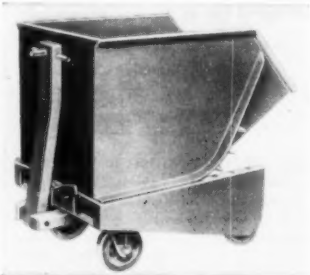
TROLLEY HOIST **P1133**

Built in capacities from ½ to 3 tons, these hoists are available with a special load bar, and either a pair of 2-wheel plain trolleys, or one plain and one geared 2-wheel trolley. The plain trolley assembly has chilled tread wheels with ball bearings, steel side plates and connection to load bar.

Geared trolley is the same as the plain except that the wheels have gears with cut teeth, pinions with cut teeth, hand chain and chain guide. Thrust roller holds proper alignment of the assembly on straight or curved track. For service where close headroom is required. Leaflet DH-269 available.
Wright Hoist Div, American Chain & Cable Co, York, Pa.

ASH HANDLING **P938**

Manual handling is not necessary with the new *Vac-Veyor* ash-handling system that conveys ash, soot and dust in a dry condition under the pull of a vacuum through pipes from the system intakes to a receiver on top of an ash-storage silo. A steam exhauster beyond the ash receiver creates the vacuum and at no time does the ash come in contact with the steam.
Beaumont Birch Co, Philadelphia, Pa.



SELF-DUMPING TRAILER **P205**

Conveniently sized for one-man handling, *Phil-Dump* model T-SRF-½, self-dumping trailer features a sturdy tongue for manual and tractor handling as well as pockets for prongs of a fork lift truck. Made of heavy gage steel, all-welded construction. Wheels are equipped with roller bearings and solid rubber tires; two of the wheels are castered for easy maneuvering.
Phillips Mine & Mill Supply Co, 2374 Jane St, Pittsburgh 3, Pa.

FORK TRUCKS **P127**

Hydraulically operated clamping forks can be fitted with self-aligning rubber faced gripping pads to handle cylinders.
Lewis-Shepard Products, Inc, 191 Walnut St, Watertown 72, Mass.

LIFT PLATFORM **P623**

Extra-large, 80 cu ft end-dump hopper is feature of 4000-lb capacity, electric, high-lift platform truck designed for handling bulky loads such as sand, gravel, coal, ashes. Hopper can be tilted downward to scoop up loads or it can be loaded from overhead.
Yale & Towne Mfg Co, Philadelphia 15, Pa.

MECHANICAL TRANSMISSION:

Speed changers, clutches, bearings, couplings, and related equipment

POWER DRIVE P935

Larger horsepower *Speed-Tron* electric-power drive, designed to meet a drawing demand for variable-speed drive to 20 and 25 hp ratings, are now available in drip-proof models. They prevent liquids and other foreign material from falling into the motor. The motor housing and variable-speed transmission case are rugged, gray iron castings for corrosion-proof properties.
Sterling Electric Motor, Inc, 1501 Anaheim-Telegraph Road, Los Angeles 22, Calif.

VARIABLE-SPEED DRIVE P951

Designed for installations where driven-shaft speeds must be lower than motor-shaft speeds. Unit utilizes 7- and 8-in. combination sheaves and is available for drives from 2 to 15 hp.

Assembly consists of a sealed ball-bearing countershaft stand, secured by rigid slide rods to an adjustable motor support for all motor sizes up to NEMA 326. The built-in control can be mounted in any one of a number of positions to suit the requirements of the installation.
Speed Selector Inc, 118 Noble Court, Cleveland 13, O.

BRONZE BEARINGS P820

Plain, flanged, split, or any combination bronze bearings and bushings from small sizes up to those 24 in. dia can be had with finishes ranging from an accurate machined one for precision applications to a semi-finish for rough work. The bearings are cast from rigidly controlled metals of the proper type for the particular use and can incorporate special lubrication designs to meet individual requirements.
Bronze Bearings, Inc, 964 North Ave E, Cranford, N. J.

LEATHER V-BELT P1043

Leather link construction, double-faced V-belting. Each link consists of two fiber sections faced with oak-tanned leather. Steel connectors insure great flexibility and eliminate stretch. Leather segments are V-faced to provide a double bevel that conforms to standard V-belt sheaves. The double-V feature prolongs useful life of belt since on straight drives it can be turned over to become equivalent of a new belt.
Graton & Knight Co, 348 Franklin St, Worcester 4, Mass.

OVERLOAD PROTECTION FOR SPEED REDUCER P323

Overload release for the Dodge *Torque-Arm* Speed Reducer provides instant and positive protection for driven machines, motors and the speed reducer itself. Designed to prevent breakdowns, and insure against interruptions of production resulting from any excessive load on the equipment.

This device is called the Dodge *Tri-Matic* overload release. It gives triple protection against overloading as outlined below. It does not replace the normal electrical protection to the motor. Circuit breakers, fuses, thermal overload units etc remain in the picture.

Release acts instantly and positively. It operates both mechanically and electrically to (1) loosen the belts (2) cut off the current (3) activate a warning bell, siren or light. Pressure exerted by an excessive load causes a piston to move lengthwise through the unit. This loosens the belts and cuts off current simultaneously. Warning system is hooked up to the micro switch.

New unit replaces the standard torque arm that is regularly furnished with the Dodge Speed Reducer—the two are interchangeable. The *Tri-Matic* will be available from distributors' stocks in sizes for all Dodge *Torque-Arm* Speed Reducers in either single or double reduction series.
Dodge Mfg Co, Mishawaka, Ind.

VARIABLE SPEED UNIT P104

Complete, self-contained variable speed power plant, new size Vari-Speed Motodrive Model No. 8000, gives the plant man all essential elements in a single, compact space-saving assembly permitting installation in many hard-to-get-at spots. Offered in horizontal and vertical designs to provide even greater flexibility.

Model 8000 has a capacity of 25 hp; is available in all speed ranges from 2:1 to 6:1. User can select any standard constant-speed motor.
Reeves Pulley Co, Columbus, Ind.

MOTOR-BRAKE P1242

Fast, controlled braking of U.S. *Vari-drive* motors through type ICB brake mounted directly on variable speed shaft. Suited for inching or jogging, the ICB offers instant, shockless operating without noise and produces a constantly increasing torque during stopping.

Unlike the solenoid type brake, its frictional force is controlled directly by magnetic action. Braking torque, once set, is permanent—an important aid in applications demanding accurate regulation.
U.S. Electrical Motors, Inc, 200 E Slauson Ave, Los Angeles 54, Calif.

TORQUE-ARM SPEED REDUCER P522

Double-reduction shaft-mounted speed reducer, No 7, has capacity to 43 hp and output speeds from 12 to 110 rpm. Reducer is anchored with a torque-arm that fastens to any fixed object. A turnbuckle adjusts belt tension. No foundation and no flexible couplings are needed.
Dodge Mfg Corp, Mishawaka, Ind.

MECHANICALLY CONTROLLED VARIABLE SPEED DRIVE P225

Mechanical automatic control on Reeves Series 1000 fractional hp *Vari-Speed Motodrives*. Formerly only handwheel and electric remote controls were offered in this series. These units are manufactured in ¼, 1/3, ½ and ¾ hp sizes, with speed variations as high as 10 to 1.
Reeves Pulley Co, Columbus, Ind.

VARIABLE SPEED DRIVE P1256

Capacities range from tachometer drives to 10-hp. Ratios up to 50:1 with speed ranges from 150 to 7500 rpm are produced by compounding wide range combination sheaves. Standard NEMA motors of any required electrical characteristics and of either open or explosion proof types are employed.
Speed Selector Inc, Cleveland, Ohio

WORM SPEED REDUCER P326

A variety of ratios available ranging from 5 to 1 through 100 to 1 and from fractional up to 400 hp. The smaller units, 1⅛,

1¾ and 2¼ in. dia. feature universal mounting for worm on bottom, top or vertical installation.

While delivery is made with assembly as specified, legs are removable and can be mated to other holes in housing to permit varied mounting. Ten sizes ranging from 3½ in. through 14 in. are all fan cooled.
National Transmission Distributors, Inc., 684 Broadway, New York, N. Y.

VARIABLE-SPEED EXPLOSION-PROOF MOTOR P441

Rather than connecting an explosion-proof motor with a separate speed changer, this unit is self-contained, all mounted in the same frame and on one base. By turning a control dial, change in speed is provided instantaneously. The motor is available in output speeds from 2 to 10,000 rpm in ratings from 1 to 20 hp.
U S Electrical Motors, Inc, 200 E Slauson Ave, Los Angeles 54, Calif.

CHAIN DRIVE P713

Hy-Vo (high velocity) chain drive can transmit to 5000 hp at linear speeds up to 6500 feet per minute or 3600 rpm. A 2-in.-wide *Hy-Vo* drive has transmitted 500 hp.

New chain-and-sprocket engagement principle virtually eliminates "chordal" or polygon action common to the usual chain drive (bumping, slapping, jerking action). Sprockets resemble involute gears, having curved teeth that engage the *Hy-Vo* links.

Hy-Vo does not replace present roller or silent-chain drives, but rather supplements them.
Morse Chain Co, 7601 Central Ave, Detroit 8, Mich.

FREE CARDS

On page 155 for your convenience in ordering more information

PRECISION SPEED CONTROL P1255

Regutron magnetic amplifier control is used with E-M adjustable-speed magnetic drive. Latter is electromagnetic torque transmitting device that gives variable speed output when used with constant speed motor.

Control eliminates all complicated electronic circuits of previous electronic-type amplifiers. Simple saturable-core reactor amplifier system using non-moving parts gives precise, stepless control of speed within ± 0.5%. Current amplification ratio is approximately 20,000 to 1.
Electric Machinery Mfg Co, Minneapolis 13, Minn.

GEARMOTOR P948

By using two secondary pinions to drive the output gear, the effective torque rating is double that of a conventional single pinion and gear unit. Splined herringbone pinion equally divides load between the two secondary pinions.
U.S. Electrical Motors, Inc, 200 East Slauson Ave, Los Angeles 54, Calif.

ELECTRICAL METERS:

Watt and volt-meters, testers and all types of electrical instruments

SCANNING SYSTEM P512

Continuous and automatic monitoring of 270 separate temperature points is possible with manufacturer's *ElectroniK* scanning system. It consists of a recorder, rectifier and control unit. Alarm gives a visual or audible indication when temperature at any one point exceeds the desired limit. The operator can switch to manual control if he so desires, further he can select the kind of record the machine makes—recording only when a set point is exceeded, or recording all points continuously, or recording none and scanning only to sound alarms, or recording only manually selected points. Instrument is said to work well in boiler tube temperature recordings and similar services.
Brown Instruments Div, Minneapolis-Honeywell Regulator Co, Wayne and Windrim Ave, Philadelphia 44, Pa.

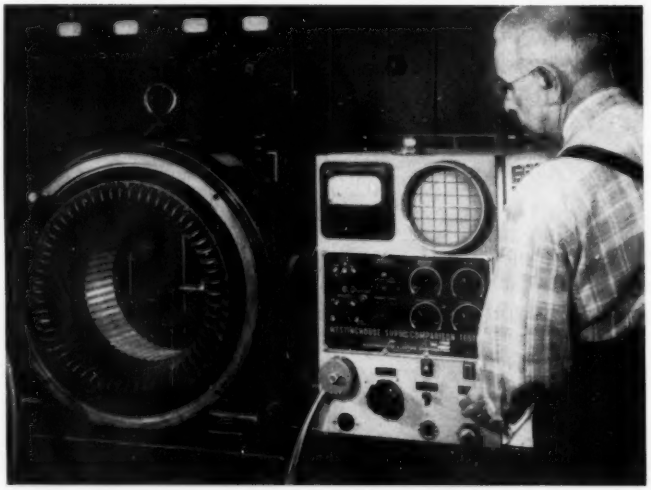
INSULATION TESTER P105

Redesign of 10-kv winding tester, for detecting insulation faults and winding dissymmetries in motors, generators, and coils. Particularly effective in production-line testing because tests can be made easily and quickly. Tester detects insulation faults by stressing turn-to-turn and coil-to-coil insulation to higher values more conveniently than other methods.

Consists of a repeating-type surge voltage generator, a cathode-ray oscillograph, and a synchronously driven switch for alternately reversing direction of surge travel through the winding. Entire tester is contained in one cabinet.
General Electric Co, Schenectady 5, N. Y.

MEASURING LOW VOLTAGE P1252

Narrow-span potentiometer instruments



ONE TEST SET-UP GIVES FULL INSULATION STORY P112

New electronic surge comparison tester wraps up all the answers you need for most insulation tests with one test setup. Used principally to locate insulation faults and winding dissymmetries in motors, ac and dc generators, transformers and coils.

Available in either mobile or portable units. It is compact, movable; has adequate surge voltage characteristics for most insulation tests. Simplicity of operation plus wide flexibility makes this surge tester adaptable to either manufacturing or repair work.

It simultaneously tests turn-to-turn, phase-to-phase, and coil-to-ground insulation with potentials high enough to simulate power circuit transient stresses.

Wih every test setup, high-frequency and high-potential qualitative tests of resistance, impedance, and turn balance are made, and results are obtained by a single scope observation. High turn-to-turn voltages are applied without excessive winding-to-ground stresses. Non-destructive testing is assured even on fractional horsepower motors and generators, and destructive fault location is possible in many cases.
Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

make accurate measurements of dc potentials in microvolts. For laboratory investigations and production line measurements of low potential signals. Instruments are also useful (with appropriate primary measuring elements) for precise measurement of differential temperatures, and of slight variations in temperatures of small objects, by using radiation pyrometry.
Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Ave, Philadelphia 44, Pa.

SPLIT-CORE VOLT-AMMETER P429

Amprobe 1200 has six features: (1) doughnut-type transformer practically eliminates error due to position of conductor within probe jaws (2) ammeter ranges of 0-15/60/150/300/600/1200 amps ac, and voltmeter ranges of 0-150/300/600 v ac (3) self-insulating plug (4) completely insulated jaws (5) wide-angle window and (6) a length of 8½ in. and a weight of 15½ oz.
Pyramid Instrument Corp, 630 Merrick Rd, Lynbrook, N. Y.

PRECISION OHMMETER P349

ARI precision ohmmeters, Models 244A and 246A, lick the problem of change in internal resistance in batteries due to aging. They are therefore capable of high accuracy in a small, self-contained unit.
Associated Research, Inc, 3770 W Belmont Ave, Chicago 18, Ill.

VOLTAGE TESTER P1118

Redesigned tester with insulated one-piece molded case. Slotted receptacle on each side provides test mount for either prod. When not in use prods may be inserted in bottom of receptacle, completely shielding sharp points. Tester can then be conveniently and safely carried in pocket or case.

Operating parts interchangeable with previous *Wigginton* testers, making service parts readily available. Range covers 110, 220, 440, 550 volts ac, and 125, 250, 600 volts dc. Also available for 400-cycle systems. For descriptive literature address:
Square D Co, 6060 Rivard St, Detroit 11, Mich.

RESISTANCE BRIDGE P641

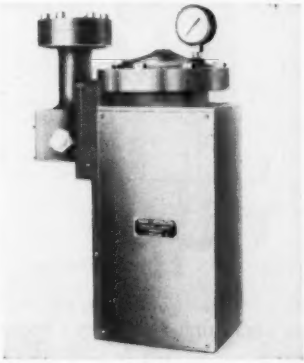
Small, handy measuring bridge designed to take the place of a large wheatstone bridge for measuring resistances in the field, workshop or laboratory. Its small dimensions make it convenient for carrying in coat pocket or briefcase.

Range of this measuring bridge is 0.05 to 50,000 ohms over six ratios. Exceptionally simple to operate, this bridge is always ready for use since the source of supply, a standard flashlight battery, is contained in the case.
Herman H Sticht Company, 27 Park Place, New York, N. Y.

TO LEARN MORE ABOUT ANY NEW product, send in cards, page 155

MEGOHMMETER P1044

Vibrotest Model 264 insulation resistance tester has a testing range from 0-100 megohms at 500 volts dc; plus a low-range 0-10,000 ohm scale. The 100-megohm scale (2 megohms center scale) provides range for accurate charting of insulation resistance to show up deteriorating or faulty insulation before it reaches a minimum resistance value consistent with safety.
Associated Research Inc, 3770 W. Belmont Ave, Chicago 18, Ill.



SIGNAL TRANSMITTER P1131

High-pressure flow signal transmitter, pneumatically-operated flow-differential measuring unit, carries signals to remote recording or indicating instruments or to automatic-control units. It has interchangeable measuring elements that cover a continuous range of pressure differential from 5.5 in. wg. to 100 psi at static pressures up to 1500 psig. The new instrument can measure flow differentials of liquids, gases, vapors, or static pressure or liquid level. Accuracy is within 1% of full-scale reading. A change of only 0.1% in applied pressure differential affects a change in loading pressure when sending maximum loading pressure.
Hagan Corp, Hagan Bldg, Pittsburgh 22, Pa.

RECORDING CLAMP-ON AMMETER SPOTS TROUBLE P1257

New *TAG-Weston* combination (recording ammeter and clamp-on unit) reveals proper or improper handling of plant equipment, detects unwarranted use of power, and discovers unnecessary waste of production line time by checking starting and ending time of operating equipment. Clamp sensing element transmits findings to recorder. Chart can be removed for permanent filing.
Tagliabue Instruments Div, Weston Electrical Instruments Corp, 614 Frelinghuysen Ave, Newark, N. J.

LOW RESISTANCE OHMMETER P236

Ohmmeter is supplied in two models, both having the same ranges of 0 to 1000 and 0 to 10,000 microhms. Model 1 B is a battery-powered set using 2 dry cells. Model 1 R has a built-in rectifier that can be plugged in to any ordinary lighting circuit outlet.
James G Biddle Co, 1316 Arch St, Philadelphia 7, Pa.

DISPLACEMENT INDICATOR P825

Electronic displacement indicator and controller, *Type 131*, for use with the *Schaevitz* linear variable differential transformers and pressure transmitters, has a range of displacement control from plus or minus 0.001 in. to 1.0 and displacements greater than this range may be handled through mechanical leverage. Pressure control is available in the range from 0 to 10,000 psi.
Sterling Instrument Co, 13331 Linwood Ave, Detroit 6, Mich.

SOIL-RESISTIVITY METER P1248

Model 243-A *Vibroground* is a direct-reading meter for measurement of soil resistivities from 0 to 30,000 ohms per cubic centimeter. Weight (with batteries) is 9 lbs; overall size is 9x6x6½ in. Power is provided by 8 standard No. 2 flashlight batteries.
Associated Research, Inc, 3770 W Belmont Ave, Chicago 18, Ill.

METERS AND INSTRUMENTS:

Mechanical recorders, indicators for pressure, flow and other non-electric applications

WIND RECORDER P942

Rugged recorder houses a wind-velocity recorder of a dual-range design. Range 1 covers from 0 to 50 mph, and range 2 from 5 to 200 mph. Velocity indications are made by a pen moving across a logarithmic scale. Instrument is furnished for use with either a directional or a horizontal non-directional probe. The probes are temperature compensated.

Hastings Instrument Co, Super Highway and Pine Ave, Hampton 10, Va.

CONTROL THERMOMETERS P513

Snap-acting, electric contact control *Electr-O-Vane* thermometers can be furnished for eccentric scale indicators or for one- or two-pen recorders. In two-pen systems a pressure element can replace one of the thermal systems. Units are vapor, gas or mercury-actuated as specified, with necessary ambient temperature compensations made as part of the meter assembly.

Brown Instruments Div, Minneapolis-Honeywell Regulator Co, Wayne and Windrim Ave, Philadelphia 44, Pa.

LIQUID MEASUREMENT P1218

Complete line of porcelain-enameled steel-staff gages for water, sewage and other liquid measurements is said to be impervious to rust, discoloration, other deterioration even with a high acid content.

Porcelain Enamel Institute, 1010 Vermont Ave, N.W., Washington 5, D.C.

STEAM AND GAS METER P614

Model SMKS *Shuntflo* meter is designed for steam, air and gas. It is suited for district heating, departmental and process work in industrial plants and similar services. Dials are located below meter body for easy reading.

Builders-Providence, Inc, 345 Harris Ave, Providence 1, R. I.

RESISTANCE THERMOMETERS P211

New line of resistance thermometers provide accurate indication and control of temperatures from −100 to +300 F.

Instruments apply in a wide variety of industrial processes. Available in three basic types of flush or surface mounting: HP-11 resistance-thermometer indicator; HP-13 two-position controller or protector; and the HP-14 three-position controller.

General Electric Co, 1 River Road, Schenectady 5, N. Y.

TACHOMETER P331

Suitable for turbine overspeed tests, production motor test stands, dynamometer test stands, laboratories, and similar precision speed measuring applications. Accuracy is sustained, even under adverse external conditions, by simple calibration adjustments, mounted on front of instrument.

Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

PEN RECORDER P818

Electronic, high-speed pen recorder measures rapidly changing variables, such as those developed in laboratories and test applications. Device will prove helpful in analyzing fuel efficiencies and engine design, for spectrographic and other analyses where high scanning rates and narrow change increments are encountered. Full-scale signals, which vary as rapidly as 20 cycles a minute, can be recorded on this new model.

Minneapolis-Honeywell Regulator Co, Brown Instrument Div, Wayne & Windrim Aves, Philadelphia, Pa.

DAYLIGHT INTENSITY RECORDING UNIT P1239

Cell unit and recorder operate together as a calibrated assembly.

The cell, for mounting atop a mast or in any dominant location, is a refined version of a U.S. Weather Bureau design, tested in field service. Using a barrier-layer photocell, the assembly is designed for collecting total illumination of sun and sky, and for filtration to match the photocell spectral response to the mean visibility curve of the human eye.

Leeds & Northrup Co, 4934 Stenton Ave, Philadelphia 44, Pa.

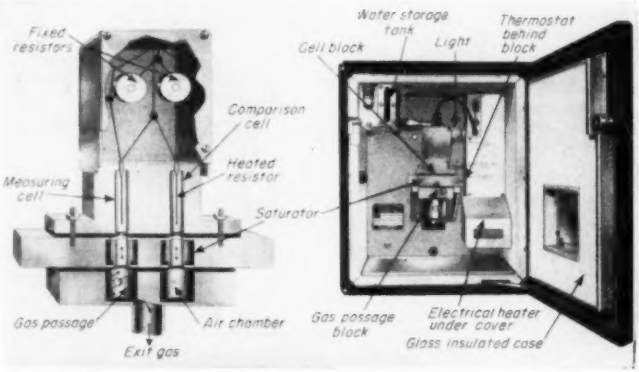
SURFACE THERMOMETER P124

A small amount of silicone grease lets you apply this 0-300 F, 2-in. dia model 310 surface thermometer to refrigerators, cold chambers, journals, motors, industrial walls for temperature readings or checking on heat and cold leaks.

Pacific Transducer Co, 11921 W Pico Blvd, Los Angeles 64, Calif.

ALL-USE THERMOMETER P816

Corrosion-resistant, stainless-steel case houses a new thermometer, TAG model



CO_2 RECORDER FEATURES 5 SECOND RESPONSE P242

Gas to be analyzed flows through passage from which portion diffuses through saturator. Here it is saturated to a constant water vapor dilution at 130 F and flows into measuring cell. There it cools heated resistor in proportion to its thermal conductivity. Heat removed from the resistor changes its electrical resistance.

Similarly saturated, air diffuses from air chamber into comparison cell. It, too, conducts heat away from heated resistor proportional to its thermal conductivity, thus changing electrical resistance. This is used as a constant reference.

Change in resistance of comparison cell resistor is compared with change in resistance of measuring cell resistor in bridge circuit of analyzer. Bridge circuit is connected into network of recorder where resultant resistance measurement is amplified, indicated and recorded.

Because of (1) rapid change of sample gas in the gas passage system, (2) small volume of gas in the analyzing cell, (3) continuous connection (through the amplifier) *Condu-Therm* CO_2 recorder gets a 5 sec response between the analyzer and the recording pen motor.

Not a laboratory instrument, the *Condu-Therm* is constructed for boiler plant use. It features (1) linkage of ⅛ x ½-in. bar (2) multiple pen bearing of telescoping stainless steel tubes (3) Oilite bearings which do not require lubrication (4) a chart plate of ¼-in. permanent mold casting (5) unit construction for easy replacement of each main element.

The Hays Corp, Michigan City, Ind.

8689, for use in any area regardless of weather or other conditions. The thermometer has a large, clear, easy-to-read scale and can be obtained in five different types, ranging from as low as –40 F to as high as 400 F.
Tagliabue Instruments Div, Weston Electrical Instrument Corp, Newark 5, N. J.

HAND TACHOMETER P1042
Dr Horn centrifugal hand tachometer boasts six ranges covering from 25 to 30,000 rpm in one instrument. It is protected against damage from overspeeding. Bulletin 35-65-24 available.
James G Biddle Co, 1316 Arch St, Philadelphia 7, Pa.

GAS ANALYZER P1007
Gas-tight, blast-furnace-gas analyzer and alarm, *the GB*, has a special provision to protect the lens on the lamp and cell from moisture accumulation. The analyzer, a photoelectric type, has the incoming gas brought to the center of a sampling tube. Here the sample gas can flow in either of two ways to exhaust to the atmosphere where it is burned. The outlet to atmosphere is large in relation to inlet because it is necessary to keep pressure constant in the sampling tube.
General Power Plant Corp, 381 Fourth Ave, New York 16, N. Y.

LEAK DETECTOR P926
New, effective method for detecting liquid leaks in vessels of all kinds and sizes develops from the use of fluorescent agents. An extremely dilute solution of the agents is placed inside a container or vessel to be tested. The slightest flow through the wall is signaled by a bright glow under the influence of rays from a special leak-detector exploring lamp, the *Raymaster* Model TSS-4 B 90. The detector has to be used in a darkened area.
George W Gates & Co, Hempstead Turnpike & Lucille Ave, Franklin Sq, L. I., N. Y.

SMOKE RECORDER P1226
Quick-acting, sensitive, null-balance potentiometer, the SR-66, is housed in rugged, steel case with molded bakelite door. The 12-in. chart for 24 hr recording set in the assembly makes record of smoke indication and can be applied on various instruments. Warning signals can be added.
Ess Instrument Co, 96 S Washington Ave, Bergenfield, N. J.

INDICATOR HOLDER P750
Magnetic base holder of nonbreakable molded plastic 1¼ in. wide, 4 in. long, and 1⅝ in. high, has steel parallel ribs 2¼x¼x¼ in. for magnetic contact surface on bottom of unit. A magnet release of helical design, fingertip-operated, connects to the bottom. At the top of the unit is a 4-in. post with ball stem pocket and locknut construction. Set includes accessories for accommodating all stem-type, hole-type and lug-box indicators so all dial indicators can be held in place.
Enco Mfg Co, 4522 W Fullerton Ave, Chicago 39, Ill.

LIQUID FLOW INDICATOR P408
Brass housing fitted with transparent high-pressure pyrex tube with a ceramic eye makes up this simple flow indicator. Known as the *Liquid Eye*, it magnifies flow when liquid line is full. Three styles are available in copper tube sizes of ¼, ¾, ½ and ⅝ in.
Allin Mfg Co, 1153 W Grand Ave, Chicago 22, Ill.

SPEED INDICATOR P922
Improved OZ hand tachometer, has a 3-in. dial single spindle quintuple selective range with a rotating gear shift. Comes in three different range combinations for speeds from 30 to 48,000 rpm or 15 to 24,000 fpm.
O Zernickow Co, 15 Park Row, New York 7, N. Y.

HOTSPOT INDICATOR P945
Line of winding temperature equipment for power transformers consisting of a hotspot indicator-relay; a hotspot indicator for local indication; and a hotspot indicator for remote indication.
Hotspot indicator-relay, Type AWR, is the first device of its kind to provide, in one unit, accurate indication of hot-spot temperature as well as automatic starting of cooling fans, oil pumps, alarms, or any other circuit in the desired sequence and at a predetermined hot-spot temperature.
General Electric Co, Schenectady 5, N. Y.

CANTILEVER LOAD CELL P227
This instrument changes a mechanical force into a proportionate electrical signal that is transmitted to an indicator or recorder for evaluation. Load cell operates on the simple cantilever beam principle. One end of the beam is fixed and force to be measured is applied to the free end of lever.
Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

ELECTRONIC MANOMETER AND FLOWMETER P1235
Sensitive electronic manometer and flowmeter, has no glass or plastic tubes and contains no fluids. Operates from a noble metal thermopile. Two taps on gauge tube connect to two points where pressure difference is to be measured. To use instrument as flowmeter, tube is placed directly in line for low flow rates, or connected to pressure taps on two sides of a calibrated orifice for high flow rates.
Hastings Instrument Co, Inc, Super Hwy and Pine Ave, Hampton 10, Va.

TACHOMETER P732
Three-range, single-head, fixed-installation tachometer indicator for speed measuring applications, Series 42P, gives a particularly wide measuring range. Simple rotation of the indicator range knob selects one of three speed ranges covering from 40 or 50 to 1, based on readings down to 1/10 full scale of lowest range.
Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

TEMPERATURE PICKUP P437
Voltage output (0-1 v) and short thermal-time constant (less than 1 sec in water) are the outstanding features of *Type 21* temperature pickup. Designed to measure temperatures up to 1000 C (1832 F), these pickups provide a resistance change of 50 ohms over their specified temperature ranges and may be excited with 20 milliamperes rms.
Trans-Sonics, Inc, Bedford Airport, Bedford, Mass.

MINIATURE STRIP CHART RECORDER P325
Independently powered miniature strip chart recorder plus an electronically actuated pen are features of the *Autronic Recorder*. Suitable for use in chemical and food processing plants, refineries, petrochemical installations, central stations, and industrial power plants. It is an electronic servo-powered null-balance device creating a highly accurate and instantaneous record of measured variable.
Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio

PIPING, VALVES, FITTINGS and Accessories

SELF-SUPPORTING ROTARY PRESSURE JOINT P1018

Joints are suitable wherever heating or cooling agents must be admitted to rotating rolls, as in paper-making, textile and rubber mills. Type S joint was developed specifically for jobs where misalignment is met. It is suitable for pressures up to 250 psi.
Johnson Corp, Three Rivers, Mich.

MANUAL CONTROL VALVE P1012

Heavy-duty valve No. 788 has totally enclosed gear-reduction drive, extended shaft and floor stand. Sealing of water pressure obtained by babbitted seat in body, and monel or stainless steel welded to the periphery of valve disk. Metal-to-metal seat gives shutoff suitable for most installations. With a 350-ft head of water on a 36-in. valve, leakage with a babbitted seat is 50 gph. Remote, automatic or semi-automatic controls also available for this type valve.
R-S Products Corp, 4600 Germantown Ave, Philadelphia 44, Pa.

MOTOR VALVE P923

Air-operated diaphragm valves, Series 62, for on-off and narrow band proportional control, are primarily single-seated, tight-closing devices, requiring a minimum of mounting space and available in a wide variety of body materials and styles. Sizes range from ½ through 2 in., for a spring designed for tight shutoff and narrow band control, ½ through 8 in. for an on-off service. These valves operate over an air pressure range from 0 to 15 psi.
Minneapolis-Honeywell Regulator Co, Brown Instrument Div, Wayne & Windrim Ave, Philadelphia 44, Pa.

HIGH-PRESSURE GATE VALVE P1139

Designed for the high-pressure field. Some features of this valve are a bolted bonnet, tongue and groove joint with soft-iron gasket to assure tightness, and hard wedge facing that minimizes seizing, galling and abrasive wear. Stainless-steel gland bolts and nuts prevent freezing or corrosion, while the two-piece gland and follower applies uniform pressure on packing. Sizes run from ¼ to 2 in., inclusive.
R-P&C Valve Div, American Chain & Cable Co, Inc, Reading, Pa.

GAS SAFETY VALVE P823

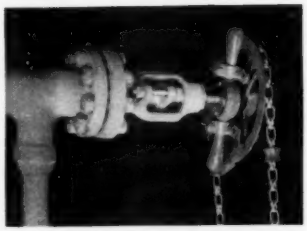
Combination safety and plug valve, MR-5, has a particular advantage in that it fails to the safe side in a pilot-flame failure. MR-5 is principally a safety shutoff valve consisting of a thermocouple incorporated in a high-flow gas cock valve structure.
General Controls Co, 1801 Allen Ave, Glendale, Calif.

FORGED-STEEL GAGE VALVE P704

Identical in design detail to this firm's gage valves with female connections on both ends, this unit has a male inlet and female outlet. Valve needs no nipples when hooking pressure gages to pressure tubing or casing, nor for other connections. Male inlet serves as nipple.
Edward Valves, Inc, East Chicago, Ind.

HANDLE FOR SMALL VALVES P1201

Impactor handle makes it easy to close small valves 10 to 50 ft above floor. It delivers 2.8 times the force of usual handwheels. Lugs on handle underside strike simultaneous blows against lugs of an adapter securely attached to valve stem. There is no stem twist or distortion. Available with two adapters of different-size square openings to fit most standard-size stems of various small-valve makes.
Edward Valves, Inc, East Chicago, Ind.



ALLOY WELDING FITTINGS P220

Key-Kast alloy-steel welding pipe fittings and flanges are based on a new design of greater wall thickness throughout and added thickness at areas of stress. Fittings are said to be stronger and give longer life to piping systems at lower unit cost. They meet ASA, ASME and ASTM standards.
Key Co, East St. Louis, Ill.

VAPOR PURIFIERS P1019

Purifier of internal type can be used inside steam drums, flash tanks, evaporators, packed towers, bubble-cap towers, deodorizers and stills. Unit is guaranteed to deliver vapor with 1.0 ppm or less of total solids.
The V D Anderson Co, 1935 W 96th St, Cleveland 2, Ohio

SAVE YOURSELF TIME
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REVERSE-ACTION RELAY P838

Type 228 reverse-action relay is designed with bronze case, top and non-wearing parts. Ratio plates, inner valve and seats are stainless steel with diaphragms of nylon-inserted neoprene. Maximum pressure output at minimum pressure input from pilot or other controlling source, or vice versa, is obtained without modifications in either valve or pilot hookup.
Black, Sivalls & Bryson, Inc, 7500 E 12th St, Kansas City 3, Mo.

SMALL STEEL VALVES P306

These small steel valves for high-pressure high-temperature services are made in globe and angle patterns for both 1500- and 2500-lb use. They are especially recommended for main steam, auxiliary steam, boiler feed, drips, drains, bypasses, blowdown and similar service.
Crane Co, 836 S Michigan Ave, Chicago 5, Ill.

SLIP-TYPE EXPANSION JOINT P218

These internally-guided slip-type expansion joints are made with both single and double joints in 150- and 300-lb steel in sizes from 3 to 20 in. Bases optional in single joints, standard in double joints. Ends beveled for welding and service connections can be supplied in all sizes and types. Standard slips have 4 in. traverse but 8 and 12 can be furnished.
The Royalton Co, Inc, Gasport, N. Y.

STEAM SCRUBBER P1220

Dry steam scrubber and purifier with 2-stage separation can deliver vapor holding only 1.0 ppm or less of solids. Rectangular-shaped, anti-turbulence shield prevents turbulent liquids and sprays from reaching secondary separation chamber. The shield is a four-wall chamber with off-set corners and overlapping side plates. Vapor passes around these side plates and into secondary chamber.
Centrifix Corp, 3608 Payne Ave, Cleveland 14, Ohio

SUCTION VALVE P214

Garland suction valve is plate-type for use in ammonia machines. Moving parts weigh 1/16th as much as those in poppet valve formerly used. Valve has same port area with about half the lift. Ring-plate valve often increases capacity of compressor. Assembly, designed so no loose parts can get into cylinder, is interchangeable

with former poppet valves in Frick vertical enclosed ammonia compressors.
Frick Co, Waynesboro, Pa.

REDUCER FITTING P120

Swagelok reducer fitting permits different sizes of tubing to be easily joined. It consists of a body, two ferrules and a nut. Ferrules and a threaded chuck inside clinch tightly around tubing wall for a leakproof seal. In brass, aluminum, steel stainless steel and monel with sizes ranging from ⅛ to ⅞ in. OD.
Crawford Fitting Co, 884 E 140th St, Cleveland 10, Ohio

AUTOMATIC AIR-CHECK VALVE P1203

PPC Aircheck valve dispenses with usual stop, safety and globe valves, prevents pressure leakage through compressor during OFF cycle, dampens pipeline pulsations, and permits repairs without shutting down system where more than one compressor is on the line. Entire unit is self-contained and automatic.
Pennsylvania Pump and Compressor Co, Easton, Pa.

WELDING COUPLING P216

Tube-Turn SF scale-free welding coupling eliminates damaging welding scale from piping systems. It consists of two forged halves with hub ends ready for welding to pipe or fittings of corresponding sizes. When coupling halves are brought together tongue of one slips into groove of the other. Circumferential cavity beneath beveled welding area prevents burn-through or formation of icicles in interior.
Tube Turns, Inc, Louisville 1, Ky.

TEMPERATURE RELIEF VALVE P321

Valve No. 201 is rated for heat inputs up to 1,200,000 Btu per hr, is of the automatic reseating type to prevent excessive water temperatures in hot-water tanks and heaters. Body is a brass casting, disk is silicone rubber. Suitable for pressure up to 125 psi.
McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.

PRESSURE PILOT P322

Available separate or integrally mounted on a Honeywell diaphragm valve, with or without a pressure-reducing valve, an air filter or a top- or side-mounted positioner. Pressure-reducing valve and air filter can be furnished when a clean supply of air or gas at a constant reduced pressure of 20 psi is not available.

Pressure ranges go from 0-40 psi to 0-600 psi with bronze or stainless-steel bourdon tube. Ranges of 0-1000 psi and 0-1500 psi use stainless-steel bourdon. Pressure pilot is used on process systems in chemical, petroleum, power and other industries.
Minneapolis-Honeywell Regulator Co, Industrial Div, Wayne & Windrim Ave, Philadelphia 44, Pa.

RELIEF VALVE P837

Assemblies consisting of two or three *Series 33* safety relief valves have been developed for safeguarding larger hot-water heating boilers from excessive pressures. *ASME Boiler Code* recommends equipping hot-water heating boilers with relief valves having tested and rated discharge capacity equal to gross Btu output of boiler. This requirement is met by the firm's No. 33 relief valve for boilers having a gross output up to 242,900 Btu per hr—about 70% of all hot-water boilers. The assemblies have been developed for the remaining 30%, or larger boilers. They give a discharge capacity equal to the sum of the capacities of two or three valves; No. 233, 496,700 Btu per hr, No. 333, 769,400 Btu per hr. Assemblies consisting of proper size valves and manifold are packaged, completely made up and ready to install.
McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.

CONTROL VALVE P836

This valve is designed for controlling flow of bulk materials from bins, hoppers and chutes in weighing, blending and packaging operations. It can also be used for free air control in heating, ventilating and drying. Flexible diaphragm made of cotton, duck, nylon, rubber or other materials, operates like the iris diaphragm of a camera. Control lever changes diaphragm opening size, material flow.
Syntron Co, 492 Lexington, Homer City, Pa.

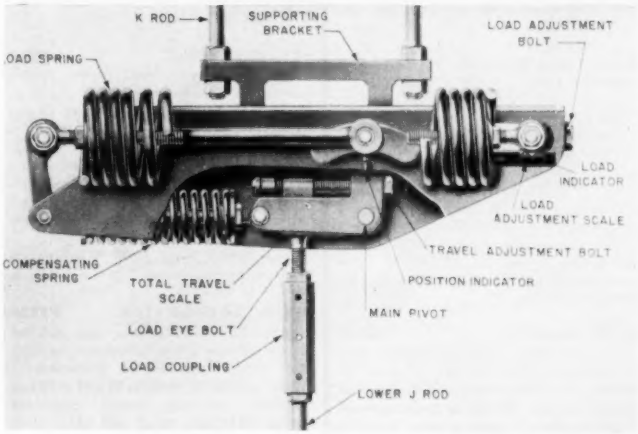
AIR AND STEAM SEPARATOR P607

For compressed air and steam lines this separator automatically removes and discharges water, oil and scale carried by the air or steam. Available in pipe sizes from ½ to 1½ in. this unit fits small spaces. All working parts are stainless steel, wearable trap parts are *anum-metal*, a special heat-treated alloy with long-wearing qualities.
Strong, Carlisle & Hammond Co, Steam Specialties Div, 1392 W 3rd St, Cleveland 13, Ohio

CONTINUOUS BLOWDOWN VALVE P839

Hit-or-miss manual intermittent blowdown of a boiler can be wasteful and dangerous. The *K-Master* continuous boiler-blowdown assembly was designed and engineered in a large industrial power plant that operated many years using various methods and devices for blowdown.

Consisting of a strainer, variable and fixed orifices contained in one unit, the *K-Master* valve operates like this. Concentrated hot boiler water enters inlet, and is deflected by the vertical baffle before passing through the monel screen. Large



CONSTANT-SUPPORT PIPE HANGER USES FEWER SPRINGS P1209

Model L constant-support hanger has simplified field adjustment, increased travel range and greater load capacity with a smaller number of springs and fewer chassis sizes. Maximum travel in the medium chassis is 5 in., in the large chassis, 10 in. Hanger gives equal lift in all positions of travel of a piping system for movement between hot and cold positions. Sixteen sizes cover the total load range, which formerly required 28 sizes.
Grinnell Co, Inc, Providence, R. I.

particles of dirt and pipe scale are caught by screen. From the strainer water flows vertically upward to an adjustable orifice. On leaving the orifice it goes to a flash chamber. Fixed orifice at flash-chamber outlet causes a pressure to build up in chamber. For any setting of adjustable orifice there is a corresponding pressure in chamber. Also, there is but one blowdown rate for each pressure that may exist in chamber. So by connecting a pressure gage to chamber, blowdown rate is easily found. To assure proper orifice for each condition, every valve is sized individually. Blow-off connected to valve bottom removes sediment.
Kaye & MacDonald, Inc, 11-15 Central Ave, West Orange, N. J.

SAFETY RELIEF VALVE P605
Type F-51 safety relief valve is for hot-water heating boilers, tanks and heaters. Available in pressure settings from 30 to 125 psi with corresponding Btu ratings at various pressure settings. Valve is all-bronze with stainless-steel spring, silicone seat disk.
A W Cash Valve Mfg Corp, Wabash and Morgan, Decatur 60, Ill.

ALUMINUM TUBING P338
Utilitube is a general purpose aluminum coiled tube made of new Alcoa aluminum alloy B50S-O. Among its advantages are low cost per foot, easy workability and high fatigue strength.
The tubing can be used in fuel oil, gasoline and lubricating oil lines for internal combustion engines.
Aluminum Co of America, 683 Gulf Bldg, Pittsburgh 19, Pa.

WATER-OIL SEPARATOR P345
PurDry separator removes water from turbine, hydraulic, or any industrial oil. Unit will reduce water content of oil to less than 1/10%.
Honan-Crane Corp, 200 Superior Ave, Lebanon, Ind.

PRECISION TUBING P123
Fine drawn, precision low carbon, welded and drawn steel tubing can be substituted in many places for non-ferrous and alloy metal tubing. New line is accurately drawn to close tolerances of inside diameter and wall thicknesses. Available in a range of outside diameters from 0.5 to 0.010 in. with wall thickness down to 0.0015 in.
Precision Tube Co, 3824 Terrace St, Philadelphia 28, Pa.

SWAY BRACES P707
This sway brace comprises a single compression-type spring, confined between two movable piston plates enclosed in a welded tubular housing. Spring is precompressed so any tendency of pipe to move in either direction is resisted by a force equal to the initial loading of the sway brace. Normally no stress is exerted on the piping but if the pipe sways or vibrates, the restoring force increases as a direct function of the movement.
Bergen Pipesupport Corp, 15 Park Row, New York 7, N. Y.

PRIME MOVERS and Accessories

DIESEL GENERATING PLANT P1208
Model 3DSP-1E is a 3000-w full-diesel generating unit. Push-switch control for electric cranking, manual compression release and an electrically heated glow plug for cold-weather starting are provided. Compact and easily installed unit generates 115-v 60-cps single-phase current.
D W Onan & Sons Inc, University Ave SE at 25th, Minneapolis 14, Minn.

STATIONARY DIESELS P1126
Series EV engines are available in models with 2, 3, 4, 5, 6 and 8 cylinders, developing 90, 135, 180, 225, 270 and 360 hp at 600 rpm. Turbo-charged EVS series is offered in 4, 6 and 8 cylinder sizes, rated 240, 360 and 480 hp at the same speed. All models have 8¾x11½-in. bore and stroke.
Lister-Blackstone, Inc, 420 Lexington Ave, New York 17, N. Y.

WATERCOOLER P869
Welded-steel, engine-jacket watercooler gives rugged service that resists vibration so cooler unit can last the life of the engine. It has heavy formed-steel channel side members, steel side supports for cores, press-formed heavy-weight nonferrous headers and a vertical water flow. Gas or lube-oil cooling coils may be mounted between fan and liquid cooling core. Then the blower cools the oil or gas cooling coils, or both, with the least rise in air temperature so cooling effect of the air stream over the liquid core is not too greatly affected. Such a combination gives a lower fan-horsepower requirement.
Young Radiator Co, 610 Wisconsin Ave, Racine, Wis.

STEAM TURBINE P210
Type H steam turbine features double extended shaft coming through governor, fast-acting hand speed-changing device, spark-proof emergency trip, and convenient vertical hand-valve position. Unit has easily removed governor valve seat and steam strainer, large capacity bearing oil reservoirs (approximately 6 qt capacity) with large fin-tube oil coolers and magnetic drain plugs.
Murray Iron Wks, 1106 Washington St, Burlington, Iowa

DIESEL DEHYDRATOR P1225
Increased combustion efficiency, reduced carbon formation, less corrosion of working parts results from use of dehydrator in diesel fuel supply system. Wound cellulose cylinders, specially treated coalescing media, perforated metal and glass cloth make up the dehydrator.
Bowser Inc, Fort Wayne, Ind.

TURBINE BUCKETS P1023
Standardized turbine buckets for high- and low-speed applications have been developed. The turbine-bucket root is designed for centrifugal loading to take place very close to the center of effort of the root so as to avoid tilting the bucket. With a circumferential wheel slot root, greater efficiency is said to result because of the pitch and elimination of gaps in bucket spacing. The integral shrouds are machined on the periphery after assembly.
Schellens-True Corp, Main St, Ivoryton, Conn.

END-LOCKING PISTON RING P1127
One-piece *Sealock* piston ring has feature that locks one ring end "in" tightly against the other. Locked end is prevented from expanding into ports in a cylinder wall. Suitable for 2- and 4-cycle engines. Seals against compression blowby.
Double Seal Ring Co, 2065 Montgomery St, Fort Worth 1, Texas

4-CYCLE DIESEL ENGINES P1022
Three watercooled and one air-cooled model are now available. Maximum power ratings of watercooled models: 3-15, 12-22.5 and 12-45 hp. Air-cooled model is rated at 3-12.5 hp, maximum. Engines are suitable for driving generators, pumps, refrigeration compressors, auxiliaries, etc. Units are 1-, 2-, 3- or 4-cylinder, depending on rating.
Aboe Diesel Inc, 350 Fifth Ave, New York 1, N. Y.

DIESEL AND GAS-ENGINE AIR STARTING MOTORS P132
Smaller and more compact than equivalent electric starters these air starting motors are designed for cranking diesel and gasoline engines with piston displacements up to more than 3500 cu in. Though normally operated by compressed air, they are also suitable for operation on natural gas when available at sufficient pressure. These starters eliminate the need for generators, storage-battery banks, and cost of battery maintenance and replacement.
Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.

DIESEL TEST KIT P606
Tool No. J 4209-41 includes all equipment needed to check timing, exhaust, back-pressure, rpm, blower intake restriction, air box, oil, crankcase pressure, plus cylinder liner position on all series 71 and 6-110 General Motors diesel engines. Also available are tool Nos. J 1319-A and J 4494, compression gages for series 71 and 6-110

TELL ME MORE!

We'll ask the maker to send details. Just fill out cards on page 155

and a fuel pressure gage for both series (KMO 320).
Kent-Moore Organization, Inc, General Motors Bldg, Detroit 2, Mich.

NATURAL-GAS ENGINE P850
Model LR-600 gas engine is a medium-speed unit, 1100 rpm, designed for oil-producing areas. Municipal power plants, pipeline pumping stations, oil-well drilling rigs and cotton gins are a few specific applications for this unit. It is a 6-cyl spark-ignition engine with 7¼x10-in. bore and stroke. Maximum rating is 315 hp.
Cummins Engine Co, Inc, Columbus, Ind.

DIESEL-ENGINE STAND 1 137
All-Kleer diesel-engine stand holds cylinder heads from the sides, does not block cleaning or other work on the manifold ends. Four adjustable engaging pins grasp head firmly in a non-jiggling grip. Pins fit into head bolt holes and lock into place. Small and compact, this stand handles heads and accessories up to 800 lb.
R & G Mfg Co, 504 Wysor Bldg, Muncie, Ind.

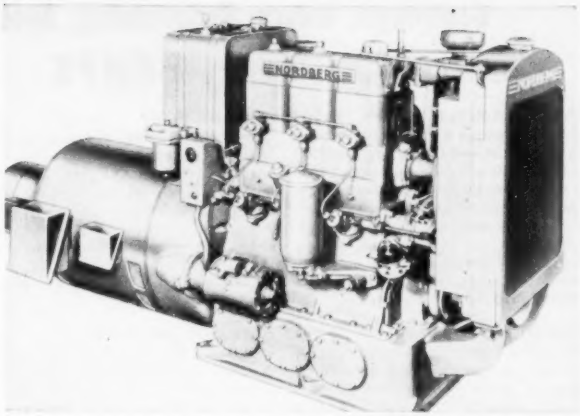
DIESEL NOZZLE AND INJECTOR TESTER P138
Specially-developed for heavy-duty diesel power, this unit permits fast accurate tests of a large number of different make nozzles and injectors. Combination set has simplified fixtures, a test pump and suitable fuel-line connectors.
Bacharach Industrial Instrument Co, 7000 Bennett St, Pittsburgh 8, Pa.

STEAM-TURBINES P1121
Designated as Types DP, DR, DRV and DRVX, new turbine units rated from 200 to 5000 hp cover wide range of industrial applications and power-generation purposes.
General Electric Co, Schenectady 5.

IMPROVED HYDROGEN COOLING
Allis Chalmers announces the installation of the world's first "supercharged" generator. Unit was installed last summer at the Edgewater plant of the Wisconsin Power & Light Co. in Sheboygan, Wis. Its design uses principles that save up to 40% of the material of a conventional generator. Reduction of weight and length in the generator comes from forcing hydrogen at high velocity directly over the surfaces of the conductors in the rotor.

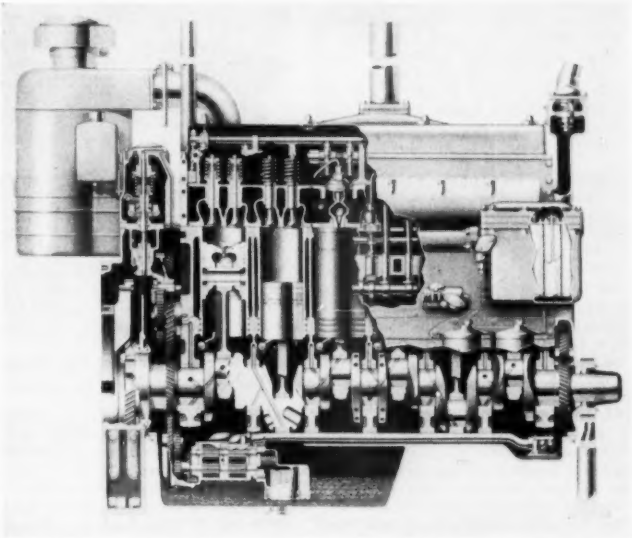
A method of cooling central station generators developed by Westinghouse Electric Corp makes it possible to increase capacities by as much as one half. Cooling arrangement blows hydrogen gas at high velocity through specially constructed, hollow generator coils. This brings hydrogen in direct contact with the heated copper and reduces heat flow through coil insulation to almost zero.

For a complete description and operating statistics of these two methods of hydrogen cooling, refer to pages 162 and 164, November, 1951, POWER.



SMALL HEAVY-DUTY DIESELS USE DIRECT OR BELT DRIVE P318

Type 4FS3 is a 4½x5¼ in 4-cycle vertical mechanical-injection 3-cyl engine. Ratings 30 to 45 hp at 1200 to 1800 rpm. Available as a generating set, pumping unit and with clutch or stub-shaft power take-off for direct or belt drive. Unit is delivered ready to connect to load. Generators are ac or dc, 20 to 30 kw at all standard voltages, 50 and 60 cps.
Nordberg Mfg Co, Milwaukee 1, Wis.



INDUSTRIAL DIESELS WITH MANY NEW DESIGN FEATURES P706

The 6-cyl D337 engine is an industrial version of the 5⅛x6 in. engine developed as a power source for the DW20 and DW21 tractors. The D326, though quite similar in design, is offered in a lower horsepower range. Horsepower ratings of each model, without fans, vary depending on loading. The D337 is rated at 180 hp at 1600 rpm, but has peak output of 275 hp at 2000 rpm, intermittent-operation rating of 250 hp at 2000 rpm, and for continuous operation is rated at 125 hp, has 186-hp peak rating, output is 170 hp at 1600 rpm. D326 unit 171-hp intermittent and 118-hp continuous at same speeds at the D337.
Caterpillar Tractor Co, Peoria 8, Ill.

Centrifugal, Rotary, Reciprocating, Special Purpose, Vacuum
PUMPS

GENERAL-PURPOSE PUMPS P1104

Type SCC pumps are close-coupled units with mechanical seals. They are suited for any small-pump application like small cooling towers and hot-water heating systems. Standard pumps are bronze fitted with casing and motor stand of close-grained high-quality cast iron. Impellers and wearing rings are hard bronze.

Economy Pumps, Inc, Div of C H Wheeler Mfg Co, Phila, Pa.

RECIPROCATING PUMPS P913

Direct-flow triplex has 3-in. stroke, and operates at speeds up to 500 rpm. Power ranges up to 50 hp, pressures to 3800 psi and displacement up to 96 gpm at 790 psi and 500 rpm. Fluid end is sectionalized to simplify maintenance.

Aldrich Pump Co, Allentown, Pa.

DIRECT-FLOW PUMPS P1011

Six-inch-stroke direct-flow pumps are built with 3, 5, 7 and 9 plungers, and range in power from 300 to 900 hp. Among their applications are chemical handling, heavy forging-press service, steel-mill descaling, water-injection in oil fields and lean oil pumping.

Pumps operate at 300-rpm crank-shaft speed suitable for direct drive from an engine or engine-type synchronous motor. They have a direct-flow fluid end with cylinders and plungers in the top of the pump in what is known as an inverted design.

Aldrich Pump Co, Allentown, Pa.

CONSTANT-DELIVERY PUMPS P916

These heavy-duty axial rolling piston pumps have a fixed stroke. Volume of oil they deliver varies with their drive shaft speed. They can operate at speeds up to 1800 rpm, and pressures of 5000 psi. Each unit consists of an axial rolling piston pump, a supercharging gear pump, a gear-pump relief valve and an adjustable reverse-flow high-pressure relief valve.

Oilgear Co, 1560 W Pierce St, Milwaukee 4, Wis.

STAINLESS-STEEL PUMPS P215

Allchem pumps have *teflon* impellers, teflon-packed stuffing box and a choice of teflon or *graphitar* self-lubricating bearings as standard equipment. Built with stainless-steel casing and shafts.

Eco Engrg Co, 12 New York Ave, Newark 1, N. J.

INDUSTRIAL PUMPS P615

These high-pressure two- and four-cylinder reciprocating pumps are offered in eight sizes with capacities from 3½ to 60 gpm and pressures from 350 to 1000 psi. Simplified design using a Scotch yoke reduces number of moving parts to minimum. Pumps handle many liquids from water to viscous or abrasive solutions.

The Royalton Co, Inc, Gasport, N. Y.

ROTARY PUMP P311

Imo A313B pump is a low-cost model, designed to handle a wide variety of oils at pressures up to 275 psi. Intermittent pressures to 325 psi are allowable. Capacities go up to 80 gpm. Applications include rotary and steam-atomizing burners, lubrication, governing systems and similar services.

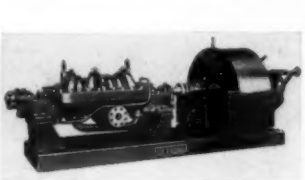
De Laval Steam Turbine Co, Trenton 2, N. J.

SELF-PRIMING PUMPS P915

Designed for easy replacement of wearing parts this self-priming centrifugal pump is guaranteed to meet capacity standards of the Contractors Pump Bureau of the Associated General Contractors of America.

Sizes range from 1½ to 6 in., and capacities from 70 to 1500 gpm. High-carbon steel air peeler and open type impeller assures maximum water-handling capacity. Bulletin No. 51-27 available.

Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.



MULTISTAGE PUMPS P1010

Four-, six- and eight-stage opposed impeller pumps are designed for general medium pressure and temperature services up to 1000 gpm at 1200 psi and 400 F. They are suited to boiler-feed, oil-refinery service for handling liquids ranging from propane to strong caustic and general water service, descaling, hydraulic and mine drainage.

De Laval Steam Turbine Co, Trenton 2, N. J.

TRIPLEX PUMP P1202

Heavy-duty, packaged hydraulic power generator is for all types of hydraulic-power systems. It comes in 15, 30 and 50 hp sizes with pressure ratings to 5000 psi and displacements to 60 gpm. Special 10,000- and 20,000-psi heads are also available.

Kobe Inc, Div of Dresser Equipment Co, Huntington Park, Calif.

LIGHT-FLUID PUMP P455

Magna-Mite is a compact positive-displacement pump with a capacity from 1½ gpm down to ¼ gpm or less. Similar to vane-type pumps, vanes in this unit are replaced by rollers that contact outer case, rolling friction replacing sliding friction. Pump life is said to be increased three to five times. Vanes are hydraulically balanced.

Milwaukee Hydropower, Inc, 3447 N 35th St, Milwaukee 16, Wis.

STAINLESS-STEEL PUMP P914

A small centrifugal pump for the chemical, process, food and other industries has all wetted surfaces made of type 316 stainless steel. It is built in ¾- to 1½-in. discharge size, with power from ¼ hp at 1750 rpm and 2 hp at 3450 rpm.

Bell & Gossett Co, Morton Grove, Ill.

HAND PUMPS P761

Built in 7, 10, 14 and 28 gpm sizes, these rotary hand pumps have suction and discharge pipes for drum and skid tanks. They have return drip pans for barrel mounting, floor stand for underground tanks, and brackets for wall or foot mounting.

Blackmer Pump Co, 1809 Century Ave, Grand Rapids, Mich.

CHEMICAL PROCESS PUMP P508

Type DS pump is designed for hot or cold process liquids handled in moderate quantities against low, medium or high heads. It is especially suitable for corrosive and abrasive liquids with solids in suspension up to 5% by volume. Discharge sizes range from 1 through 6 in. Capacities go up to 600 gpm with an enclosed impeller, to 1000 gpm with an open impeller. Heads range to 231 ft. Driver is standard horizontal electric motor mounted on common base with pump.

Peerless Pump Div, Food Machinery and Chemical Corp, 301 West Ave 26, Los Angeles 31, Calif.

VERTICAL SUMP PUMPS P917

Four basic units are available in sizes from 1- to 10-in. discharge, 10- to 3000-gpm capacity and heads up to 140 ft. Pump has standard fluid ends but can have fluid ends for handling sewage in the 2- 3- and 4-in. sizes. They are driven by ½- to 75-hp motors or by steam turbines.

Guide-bearing assemblies are interchangeable as intermediate or bottom bearings. In the thrust-bearing assembly the lower-half coupling fits accurately into the bore of a large-capacity contact radial thrust ball bearing.

The Deming Co, Salem, Ohio

SUBMERSIBLE PUMP P135

Subette is a small submersible pump designed for small capacities at high heads from wells of 6 in. inside diameter or larger. Capacity ranges from 30 to 130 gpm at heads of 80 to 77 ft. Motors, available in sizes of 5, 7½, 10 and 15 hp, are 3-phase, 60-cps, 2-pole, 220/440-v and run at 3500 rpm.

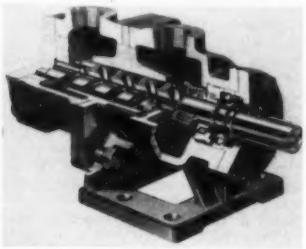
Byron Jackson Co, PO Box 2017 Terminal Annex, Los Angeles 54, Calif.

STEAM-TURBINE PUMP **P760**

Close-coupled, steam-turbine driven centrifugal pump is easy to install as it needs small space and no rigid foundation. It can be mounted at any angle—even on the wall. Close-coupled construction assures positive alignment. Being steam-turbine driven, pump's speed can be easily adjusted.

They are built in $1\frac{1}{4}$- to 3-in. sizes, capacities to 600 gpm, and head to 320 ft.

Byron Jackson Co, PO Box 2017, Terminal Annex, Los Angeles 54, Calif.



PROCESS PUMP **P305**

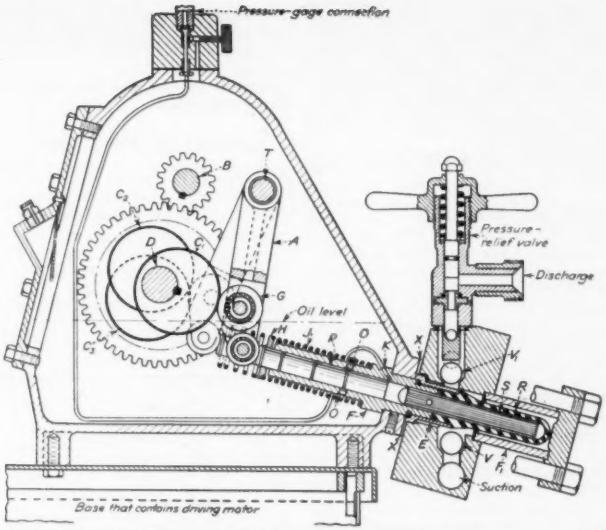
Type PR process pump handles up to 1000 gpm at heads to 625 ft, temperatures to 850 F. Horizontal motor drive standard but others like steam-turbine or stationary-engine can be furnished. Liquid end made of cast iron, bronze, carbon steel, stainless steel or other materials, as needed.

Peerless Pump Div, Food Machinery and Chemical Corp, 301 West Ave 26, Los Angeles 31, Calif.

SUMP PUMPS **P604**

Types VS and VN sump pumps are available in wet and dry-pit types to handle clear liquids, sewage and other liquids containing solids. Sizes range from $1\frac{1}{2}$ through 8 in., capacities to 1000 gpm, pressures to 250 psi. Type VS has open impeller multivane bronze or cast iron to specification. Type VN is an open two-vane cast-iron non-clog impeller.

Warren Steam Pump Co, Inc, Warren, Mass.



SANITARY PUMP ACTUATED BY BREATHING PULSATOR **P901**

Triplex, sanitary, high-pressure, homogenizer, leakproof pump has operating mechanism separated from the pumped liquid. In the drawing, section to right of *X* is the pump with its ball suction and discharge valves and pressure-relief valve. Driving mechanism, to left of *X*, has a camshaft *D* on which are three cams C_1, C_2 and C_3 that drive actuating pistons *P*. Camshaft *D* gears to shaft *B* driven through a multiple V-belt by a motor in the unit's base. Piston *P*, their cylinders and part of their operating mechanism are continuously immersed in the actuating fluid, oil.

Pulsator *R*, of synthetic rubber, is bonded to sleeve *E*. A metal support *S* inside the pulsator connects to cylinder *F* inside of which actuating piston *P* operates. This piston has a collar *H* that takes tension of spring *J*.

Arm *A* pivots at *T*. Cam C_1 rides against ball-bearing roller *G* on a stub shaft in *A*. A second ball-bearing roller on *A* contacts the end of piston *P*. In the drawing, cam C_1 has pushed piston *P* to discharge position against tension of spring *J*. When the camshaft makes a half revolution, cam C_1 will have moved 180 deg. This lets piston *P* move to the left and uncover parts *O* to make up any slight oil leakage from cylinder, ready for discharge stroke.

Pressure inside the rubber pulsator is relieved and it contracts onto its support, to create a vacuum inside cylinder F_1. Liquid then flows into the cylinder through ball suction valve *V*. When cam C_1 makes another half revolution arm *A* moves piston *P* to the position shown and drives oil into rubber pulsator *R*. This pulsator expands and forces liquid out of cylinder F_1 through ball discharge valve V_1 and out the discharge.

Pioneer Div, Scott & Williams, Inc, Empire State Bldg, New York 11, N. Y.

WATER TREATMENT EQUIPMENT and Supplies

pH METER **P559**

Universal pH meter is designed for all pH and rH work, for potentiometric titrations and for oxidation-reduction-potential investigations. For laboratory research and industrial testing purposes it provides a measuring accuracy of 0.01 pH or 0.5 mv, a range of 0-14.15 pH and 0.1415 mv, absolutely currentless measuring with no phenomena of polarization, zero indication by cathode ray tube.

The pH meter is supplied with the new, removable Philips calomel and glass electrode and is provided with controls which correct for temperature variations and for asymmetric potentials.

North American Philips Co, Inc, 750 South Fulton Ave, Mt. Vernon, N. Y.

AUTOMATIC DEGASSER **P811**

Designed primarily for determining steam purity, the *Hagan* automatic degasser produces continuously and automatically an approximately 50-50 split of a flowing steam sample. One fraction contains any dissolved solids that may be present and the other any dissolved gases. This latest model is distinguished by a new case of mild steel finished in black and specially treated to minimize corrosion. The new design makes it easy to disassemble the unit, and increases the accessibility of its inner workings.

Hagan Corp, Hagan Bldg, Pittsburgh 22, Pa.

FLOW CONTROLLER FOR WASH AND RINSE **P630**

You can prevent rates of backwashing and rinsing flow from getting too high and at the same time avoid dangers of back-siphonage of waste water with a new

anti-back-siphonage wash and rinse controller. The arrangement is standard on all the company's sodium zeolite softeners 54 in. in dia and above. It can also be provided for hydrogen zeolite, anion exchange, pressure type filter requirements. The unit conforms with state and local laws against back-siphonage.
Permutit Co, 330 W 42nd St, New York 36, N. Y.

SOFTENER TESTER P624
Periodic sampling of water leaving a softener gives automatic check on effectiveness of the output. Hydramizer takes a sample and subjects it to a soap test for hardness. If water is hard a red light appears. If it is still soft green light glows. For automatic softeners the Hydramizer will actuate valves and for selective automatic or manual units, it rings a bell to warn the operator that regeneration is needed.
Refinite Corp, Omaha, Neb.

PACKAGED CHEMICAL FEED UNIT P502
This self-contained extra-heavy *Baco* unit offers high-pressure controlled feed at low cost. Chemical reservoir tank is welded steel available in 50- or 100-gal. capacity. Pump can be designed for various rates of feed at different pressures. Motor-driven agitator assures completely mixed fluids at all times. Strainer between pump suction and tank is stainless steel.
The Bird-Archer Co, 4337 N American St, Philadelphia 40, Pa.

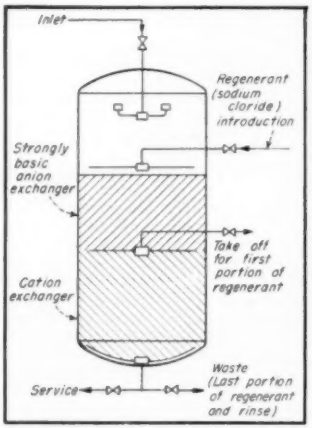
WATER SOFTENER P1128
Heavy-duty water softener ideal for medium-sized industrial applications has been added to the company's line. The new *Supreme* 600,000-gr capacity model has the exclusive patented automatic backwash control to give complete zeolite cleaning at low water pressures and yet guarantee against loss of mineral at high city pressure. Unit has no moving parts. Twin sizes up to 1,200,000-gr capacity can also be had.
Bruner Corp, Milwaukee 45, Wis.

MONO BED DEMINERALIZER P1221
Cation and exceptionally strong base-anion exchangers are mixed in a single unit tank. Raw water passes through this *Mono Bed* column only once yet comes out with mineral content practically zero (resistances are reported as high as 20,000,000 ohm per centimeter). Available in flow rate from a few to 5000 gph.
Penfield Mfg Co, Inc, 19 High School Ave, Meriden, Conn.

CATION EXCHANGERS P207
The phosphonic and phosphoric acid groups have been put to work in new sample line of cation exchangers now available for experimental work. Properties of these exchangers have not been completely determined, but they are expected to show interesting characteristics as adsorbents as well as cation-exchange resins.

Studies to date indicate the first hydrogen ion is moderately strong and splits salts in much the same way as does the sulfonic acid group, but the second hydrogen ion is quite weak and comes into action only at high pH's.
Chemical Process Co, Box 829, Redwood City, Calif.

ELECTROLYTIC PROTECTION P1224
Catalytic action of this method of water treatment does not change chemical structure of the water. Prevents formation of new scale and gradually removes old scale. Dispersion of elements that have affinity for forming scale and corrosion produces the results.
Sola Catalytic Co, 520 Browder St, Dallas 1, Texas



ION-EXCHANGE UNIT P909
Simple, inexpensive water softening, without the need for handling caustic soda, sulfuric, and hydrochloric acid during the regeneration process, can be had with the new Dual Bed ion exchanger. An installation basically has a single tank.

Water yield from the dual-bed exchanger is described as safe because it cannot produce an acid water during the treating step or acid-waste during regeneration. It employs new-type resins that are regenerated with plain salt. In addition to softening water the new resins remove alkalinity and sulfates.
Permutit Co, 330 West 42nd St, New York 36, N. Y.

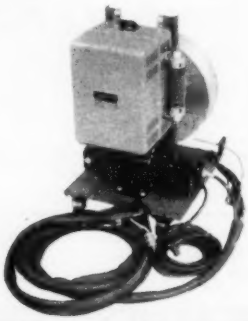
WATER PURIFIER P329
A portable version of the chrome purifier for recovering and purifying chromic acid anodizing baths and reclaiming plating and rinse waters. With this unit there's no need to discard chromic acid to maintain a required pH and acid concentration. Contamination of acid solution is kept at a minimum when processed by this method.

Illco-Way chrome purifier is available in four standard sizes.
Illinois Water Treatment Co, 840 Cedar St, Rockford, Ill.

Welders, Rods, WELDING EQUIPMENT

AC WELDERS P625
Complete new line of ac welders is available in 200, 300, 400 and 500 amp ratings. Units employ silicone as insulation; combine a low open circuit voltage with arc stabilization to give an extra surge of current if the arc starts to go out; feature automatic hot-start that makes arc-striking easy by providing just the right amount of current boost to start the arc at any current setting without manual adjustment.
Metal & Thermit Corp, 100 East 42nd St, New York 17, N. Y.

CHAMFERING ELECTRODE P419
Specially formulated electrode, the *ChamferTrode*, features a heavy coating that forms a cone at striking end of the electrode, gives a natural jet-effect arc. This intense, concentrated heat source is said to speed up fabricating armor plate and similar difficult-to-cut alloys.
Dept P, Eutectic Welding Alloys Corp, 172nd St and Northern Blvd, Flushing 58, N. Y.



FILLER METAL P1219
For use with gas-shielded arc welders, *Fillerweld* allows welding machine operator to control continuous flow of filler-metal automatically by means of finger switch mounted on the torch.

Fillerweld consists of two main elements —a torch or gun and a mechanical power unit. Gun is a manual, water-cooled inert-arc tungsten holder. Has a control switch and gear assembly for pulling the filler-metal through the gun. Mechanical element has a motor, Thy-mo-trol control, and a spool for filler-metal.
General Electric Co, 1 River Road, Schenectady 5, N. Y.

Fluxes, and all supplies necessary and related to

WELDING-ARC CONTROL P1009

New arc drive-control produces electrical transient characteristic desirable for certain welding operations. Type RA selenium rectifier welder permits the operator to adjust the arc characteristic to suit a particular job. Device operates automatically and instantaneously to provide an extra surge of welding current at the moment the arc becomes shorted, either by contact between the electrode and the work or by a globule of molten metal bridging the arc gap.
Westinghouse Electric Co, Box 2099, Pittsburgh 30, Pa.

WELDING ELECTRODE P1002

Relatively inexpensive, hard-overlay electrode *EutecChrom 2X* for ac-dc arc welding has a *FrigidArc* flux coating. It deposits a strong, dense overlay, said to have good corrosion resistance. By laying the deposit down at lower amperages dangers of distortion and stress are reduced. It is recommended for carbon and alloy steel surfaces subject to severe abrasive wear and comparatively mild impact. Available in 1/8, 5/32, 1/4 and 3/16 in. dia.
Dept P Eutectic Welding Alloys Corp, 172nd St & Northern Blvd, Flushing 58, N. Y.

BRAZING STRIP P1129

A low-carbon steel strip called *Braze Clad* has a silver brazing alloy on one or both sides in any thickness ratio and melting range to suit the requirements of each particular brazing application.

The steel surface precoated evenly with the brazing alloy makes no preplacements necessary and every joint is assured of a complete and uniform spread of alloy. In conventional brazing where preplacements of silver alloy strips are used, voids leading to joint failures are known to occur. *Braze Clad* will prove most useful wherever brazed joints must be perfect, where they must stand a severe pressure test, or where preplacements are difficult and slow.
American Silver Co, Inc, 36-07 Prince St, Flushing, N. Y.

WELDING ROD P1130

New bronze welding rod, *EutecRod* 148 SC, features an extra thin initial tinning action, which is said to be capable of eliminating prewelding preparations required by conventional rods. Each rod is covered with a new type of specially developed flux coating, yielding full-strength joints on old, corroded and dirty cast iron. Its tensile strength is listed at up to 55,000 psi with a Brinell hardness of 75 to 120.
Dept P, Eutectic Welding Alloys Corp, 172nd St & Northern Blvd, Flushing 58, N. Y.

WELDING ROD P1001

Constantly increasing emphasis on chrome-moly steel for repair and production in industry stimulated the development of *EutecTrode 70*, a chrome-and-nickel content electrode specifically designed for repair and maintenance work.

The special composition of this welding alloy, coupled with *FrigidArc* coating, results, according to its maker, in easy application in all positions and an extremely smooth arc action, plus high tensile strength at low amperage. Available in 1/16, 5/64, 3/32, 1/8, 5/32 and 3/16 in. dia.
Dept P, Eutectic Welding Alloys Corp, 172nd St & Northern Blvd, Flushing 58, N. Y.

WELDING ELECTRODE P341

Nickel-free electrode for cast iron, *EutecTrode 27*. While this new rod does not replace nickel-bearing electrodes on all applications, it is said to offer an extremely high-tensile weld with a uniform amount of carbon in the deposit. The deposited material is similar to a high-tensile, high-carbon steel.
Dept P, Eutectic Welding Alloys Corp, 172nd St & Northern Blvd, Flushing 58, N. Y.

TRANSFORMER WELDER P1113

Rugged, easy to operate, *Airco* Model MCM, 200 amp transformer-welder gives good service in general maintenance. Two open circuits, 80 v on low range, 55 on high. Combines easy arc starting with lower kva demand load and primary ampere current.
Air Reduction Co, 60 E 42nd St, New York 17, N. Y.

FASTER WELDING AT LOWER CURRENT DENSITIES P710

The speed of shielded inert-gas-metal arc welding of stainless and carbon steel can be stepped up considerably with the new Linde argon-sigma welding process. Research has established that under the best welding conditions the metal transfer consists of a series of metal droplets propelled at high velocity. Rate of droplet formation varies with different metals and different current densities.

By adding small percentages of oxygen to highly purified argon the droplet rate increases greatly. Rate of increase in this mixture has been as much as 50 times more with other conditions remaining the same. This tremendous increase with no change in current density permits welding at higher speeds without fear of undercutting. What's more, coalescence of weld metal improves with the increased welding speed. With it, overhead welding of stainless steel becomes practical.

If desired, the older rates of welding can be kept and the current densities greatly reduced. This means larger-diameter lower-cost rods can be used for a given welding current, or thinner materials can be welded with the older size rods.

The required oxygen-argon mixture sells under the name of Linde argon-sigma grade.
Linde Air Products Co, Union Carbide & Carbon Corp, 30 E 42nd St, New York 17, N. Y.

"WHEN YOU GETTING YOUR NEW GLASSES, JIMSON?—YOU'RE READING THAT CRACK IN THE WALL AGAIN!"

COURTESY AMERICO INSTRUMENTS COMPANY

Miscellaneous Equipment and Supplies

HYDRAULIC-POWER UNITS P873

New line of hydraulic units is constructed according to recommended hydraulic standards for industrial equipment. These include a motor-driven rotary pump mounted on a sealed oil tank with breather air cleaner and separate filler hole with removable screen. Elevated tank body has dished bottom, drain plugs, and clean-out holes at both ends.

Vickers, Inc, 1596 Oakman Blvd, Detroit 32, Mich.

HYDRAULIC CYLINDERS P340

Single and double acting hydraulic cylinders available in any of six clevis types. Line is built around a single basic design emphasizing simplicity.

Unit Mfg Co, 1221 Harmon Pl, Minneapolis 3, Minn.

DUST COLLECTOR P201

Low cost, self-contained dust collector, the model *JS dustbuster*, heretofore restricted to 50 or 60 cycle operation is now available for 25 cycle service. Unit's efficiency and its rated 650 cfm suction depend on 3600 rpm fan speed; V-belt overdrive has been added for lower frequency operation.

Aget-Detroit Co, Ann Arbor, Mich.

SPRING COMPUTER P1115

Spring design problems easily solved with *Calculaide* Spring Computer. It correlates in one setting all variables in spring design: OD of the spring, wire size and gage No., No. of active coils, material and its torsional modulus G, maximum shear stress, load and total deflection. All figures are directly read off.

American Hydromath Corp, 145 W 57th St, New York 19, N. Y.

METAL ALLOYS P802

New metal alloy suitable for dry bearings, precision casting, fluxless weldings, results from bringing together molten metal plus an alloying of a wet chemical mass. The result, *Chemalloy*, defies rust and resists corrosion. It is said to work without lubricants in moving machines or parts and to remain relatively cool while being lathe-turned. All possible uses for *Chemalloy* have not yet been explored.

Chemalloy Associates, Gillespie Airport, Santee, Calif.

OPERATOR'S DESK P528

Console desk allows one operator to get up to 96 temperature readings from as many process points. Desk is 60-in. wide executive type arranged with cutouts for electronic precision indicator and key-switch banks or push-button assemblies. It can be tied in with any single, multiple or colorgraphic panel board.

Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Ave, Philadelphia 44, Pa.

WATER STRIPPER P555

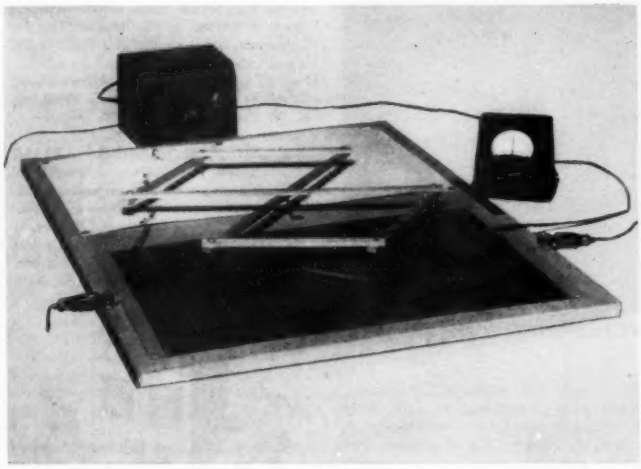
Simple, practical method of "breaking" emulsions to permit thorough dehydration of oil is claimed for new *Houdaille* water stripper for turbine oils. Reduces water content of oil to less than 0.1%. Also removes solid contamination, acid and other sludge-forming products of oxidation so oil need not be changed or discarded.

Honan-Crane Corp, Lebanon, Ind.

TEST STANDS P116

Specially designed hydraulic test stands for flexible aircraft hose testing can be readily adapted to valves, cylinders, similar equipment. Stands include pumps, relief valves, oil reservoirs, electric motors, flexible couplings for pressures to 5000 psi and up to 30,000 psi with special booster equipment.

Superdraulic Corp, 14265 Wyoming Ave, Detroit 4, Mich.



PLOTTER FOR ELECTRICAL FIELDS AND FLUIDS FLOW P328

Portable analog field plotter, a versatile tool for rapid solution of complex two dimensional field problems. Device sets up electrical field patterns in a thin conducting-paper surface on the plotting board. Analogy between the electric field in the paper and the related field problems—such as might exist in electrostatics, electromagnetics, thermal and fluid flow, etc.—allows an easy solution to a broad range of difficult problems.

Plotter can be used to study air flow patterns, electrical fields, fluid flow and temperature distribution. May be used to study fluid flow patterns and velocity gradients in steam and gas turbine blade grid assemblies.

General Electric Co, Schenectady, N. Y.

OIL PRESSURE LOADER P229

A panel-mounted oil pressure loader for manually controlled oil pressure to devices normally operated automatically. Both automatically and manually controlled pressures are indicated on gages, so operator can avoid discontinuity by matching the two pressures before switching from one control to the other. A three-way valve selects the mode of control.

Askania Regulator Co, 240 East Ontario St, Chicago 11, Ill.

MORE ITEMS on Page 156

To Get More Information.....

The selected items described here were presented for your interest and information, and to help you solve plant problems. The manufacturers are eager and anxious that you get full and complete details about their equipment. To help you get these details, we've provided the cards below.

USE THESE FREE CARDS!

HERE'S ALL YOU DO!

Pick out the equipment you are interested in. Write the number of the item in the boxes to the right. Fill out your name, address, title, and company. Tear the cards off and drop them in the mail!

BE SURE

You fill in your complete address and other information requested on each card you use. This will speed up our handling of your requests to the manufacturer.

To get further information about the equipment described, merely write the numbers of the items in the spaces below, fill out your name, address, company, and title, and drop the cards in the mail. No postage required! We'll do the rest.

Your Name_____ Title_____

Your address_____

Your company name_____

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Your Name_____ Title_____

Your address_____

Your company name_____

LAB COAL CRUSHER **P344**

Laboratory crushers were originally manufactured to crush and pulverize coal samples. They were intended to be used in coal testing laboratories of mining companies, utilities, industries, and commercial laboratories.

But in recent years, in addition to coal, other materials have been ground satisfactorily. Used welding flux, as produced by automatic machine welding, is one of the many products which have been ground successfully.

Robert Holmes & Bros, Inc, 510-520 Junction Ave, Danville, Ill.

LOW-PRESSURE CYLINDER **P928**

Low-pressure cylinder with cork floaterrings to facilitate cushion alignment with the head and assure a seal during cushioning has spring-backed chevron red packing that is self-adjusting for correct compression. Cylinder; known as LT, runs by air, oil, or water, and is designed for operation up to 110 psi. It can work on higher pressure depending on cylinder diameter and the medium—air, oil, or water.

Hanna Engineering Works, 1765 N. Elston, Chicago, Ill.

OIL FILTER **P1143**

High-pressure oil filter for lubricating and sealing oils has a cartridge made of fuller's earth or cellulose through which oil under pressure as high as 1500 psi can be directed. *Hilco* filters come in capacities starting from 1 gpm up to practically any required flow.

Hilliard Corp, 158 W. Fourth St, Elmira, N Y.

INTERCOM PHONES **P1262**

Incoming calls may be answered forty feet from any master station or sub-station. Master stations may talk with each other, sub-stations may be called selectively, or exclusively to any master station, and any master may be used privately or non-privately at its own action.

Talk-A-Phone CL series is designed for systems requiring more than one master station along with sub-stations. Incoming calls may be answered by master stations or sub-stations without manual operation at a considerable distance from the unit.

Talk-A-Phone Co, 1512 S Pulaski Rd, Chicago, Ill.

BOLT LOCK **P514**

Special patented bolt-locking device prevents bolt loosening under vibration or furnishes absolutely fixed locking for permanent structures. Device consists of a trip tooth with one or more notches. Either the nut or the bolt can carry the tooth and the other, the notches. Tooth and notch have a "saw-tooth" section.

Engineers Palazollo and Bruti, c/o General Secy, Italian Assn of Inventors, Rome, Italy.

MASONRY DRILL **P921**

Carbide-tipped masonry drill bit, called the *Cycle-Core*, with a removable *Cycle-Center*, allows precision drilling in concrete, glazed tile or other materials needing a rotary-type drill, with pressure applied for holes ⅝ in. dia and up. Removable center does away with the need of a wood template to start holes.

New England Carbide Tool Co, Cambridge 39, Mass.

PARTS CLEANER **P1109**

Low-cost bench-type parts cleaner, *Brush Flash*, has handy fountain action. Features hollow-handle brush attached to pump through a tube. Pump delivers steady flow of clear solvent at end of brush bristles.

Graymills Corp, Evanston, Ill.

OIL FILTER-PUMP **P730**

Model LGI-5 is designed for filtering light oils, fuel oil, glycerine, glycol and other organic lubricating liquids. It may be mounted above the liquid level in the supply tanks and will operate without manual priming.

This power-operated filter is equipped with a compact, positive pressure, self-priming spur gear pump. Pump consists of an aluminum body and two hardened-steel spur gears. It is equipped with a spring-loaded bypass valve, set to bypass the liquid back to pump when pressure reaches 40 psi.

Sethco, 105-07 150 St, Jamaica 4, N. Y.

MACHINIST'S VISE **P936**

Malleable-iron machinist's vise has a new-type graphite-bronze self-lubricating thrust bearing at the front of the sliding jaw. This bearing absorbs the steel screw head to give easy and positive operation, and at the same time prevent wear and end play. Because of this bearing the vise can be pulled up tighter and held more securely with less pressure than ordinary vises require.

Columbian Vise and Mfg Co, 9021 Bessemer Ave, Cleveland 4, Ohio.

PRESSURE TRANSMITTER **P228**

Atcotran Transmitter measures vacuum pressures with reference to an absolute pressure. An electro-mechanical instrument, it consists of two opposing bellows connected to a cantilever beam spring and a differential transformer. Transformer requires as little as 1/100 gram for displacement of its armature to provide an ac output

(*Continued on page 175*)

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ANNUAL NEW BULLETIN REVIEW—1952

Reviews of new catalogs and bulletins taken from regular issues of POWER during the past twelve months. Use the index below to find the ones you are interested in, then fill out and return the free postpaid cards from page 173

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AIR CONDITIONING, HEATING, REFRIGERATING AND VENTILATING EQUIPMENT

A1 **DEHUMIDIFIERS**—Describes dehumidifiers for instrument air. Each unit is equipped for electric regeneration and for fully automatic or semi-automatic operation. Capacities from 35 to 200 scfm air at 100 psig and 70 F. Operating data, prices, tables. 4-page bulletin No. DD-130. Industrol Corp, 472 Westfield Ave, E Roselle Park, N. J.

A2 **AIR CONDITIONER** — Presents data on the Trane self-contained air conditioner, available in 3, 5, and 7½-ton units. 4-page bulletin No. S-362. Trane Co, La Crosse, Wis.

A3 **HUMIDITY CONTROL**—Describes the electrically controlled concept of humidity measurement that makes possible direct humidity readings from remote locations. 4-page data sheet No. 10.5-4. Minneapolis-Honeywell Regulator Co. Brown Instrument Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

A4 **DEHUMIDIFICATION** — Presents a few facts about dehumidification for industry and is concerned mainly with too high a humidity, its cause, the problems it brings, and what can be done to control it. 2-page bulletin. Abbeon Supply Co, 179-15 Jamaica Ave, Jamaica, New York.

A5 **CONCENTRATORS**—The Niagara Series A and Series 6600 no-frost concentrators along with applications are described respectively in bulletins Nos. 119 and 118. 2 pages each. Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.

A6 **COOLING COILS**—Extended surface type. 72-page bulletin DS-365 describes coils for direct expansion refrigerants and chilled water in air conditioning or process applications. Performance and selection data, dimensions, specifications. Trane Co, La Crosse, Wis.

A7 **HEATING COILS**—Steam and hot water, standard and non-freeze types. 66-page bulletin DS-285 outlines capacities, selection, performance, dimensions of full line. Trane Co, La Crosse, Wis.

A8 **AIR CONDITIONING CABINETS** —*Model G* line. Horizontal and vertical units, 875 to 22,000 cfm. 40-page bulletin 3703A has capacity tables, diagrams, dimensions, photos. Buffalo Forge Co, 490 Broadway, Buffalo, N. Y.

A9 **UNIT HEATERS** — All-electric automatic or non-automatic, portable and suspension types. 8-page catalog EC-62 has photos, specifications, wiring diagrams. Electromode Corp, 45 Crouch St, Rochester 3, N. Y.

A10 **HEAT MACHINES**—Supply heat at floor level. Portable, oil-burning units, capacities 120,000 to 160,000 btu per hr. 6-page bulletin L-4782 gives applications, condensed specifications. Fageol Heat Machine Co, 5725 Mt Elliott Ave, Detroit 11, Mich.

A11 **FANS AND BLOWERS**—Ventilating, exhaust, floor and window models. For office, home, industry. 24-page bulletin has photos, specifications. Standard Electric Mfg Co, West Berlin, N. J.

A12 **ROOF VENTILATOR**—Straight-through type, 16 to 60 in. 1/6 to 20 hp, 1950 to 70,300 cfm. Diagrams, photos, dimensions. 2-page bulletin No. 346. The Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio.

A13 **AIR DIFFUSER** — Adjustable, *Kno-Draft* outlets control direction and volume of air flow. 32-page bulletin K-20-A gives mounting heights, "throw" formulas, selection curves, dimensions, etc. W B Connor Engineering Corp, Shelter Rock Lane, Danbury, Conn.

A14 **VENTILATION AND EXHAUST FANS**—For industrial, commercial and residential purposes. 30-page catalog gives specifications, prices, dimensions on 30 types, 300 sizes. Chelsea Fan & Blower Co, Inc, Plainfield, N. J.

A15 **AIR DIFFUSER** — Describes the new Kno-Draft high pressure diffuser, Type HPC 11 now embodying several new developments in design. Operates at high pressure and velocities, using unusually small, exposed ducts of uniform size, space-saving. 2-page bulletin No. K-26. W B Connor Engrg Corp, Shelter Rock Lane, Danbury, Conn.

A16 **VENTILATORS AND LOUVERS** —Catalog covers complete line of ventilators and louvers. Design and construction features for each ventilator type plus mounting and flashing details; performance, dimension and weight data are included. Burt Mfg Co, Dept 50, 927 S High St, Akron 11, Ohio.

A17 **AIR FILTERS**—Revised catalog of air filter sizes for air conditioning units manufactured by 31 companies. Equipment is listed under manufacturer's identification numbers to facilitate ordering of filters. 16-pages. Owens-Corning Fiberglas Corp, Dept DS1-5, Toledo 1, Ohio.

A18 **DIRECT-FIRED HEATERS**—Installation, operation and construction of direct-fired self-contained heaters for buildings with large open areas. Burn oil or gas. Capacity tables, dimensions, piping diagrams and typical specifications. 20-page bulletin No. 802A. Airtherm Mfg Co, 772 S Spring Ave, St. Louis, Mo.

A19 **AIR DISTRIBUTION** — Pictures air-distribution outlets in television studios, lists bulletins with data on ceiling outlets for offices, studios, reception rooms. 4-page pamphlet No. F-4712. Barber-Colman Co, Rockford, Ill.

A20 **AIR FILTERS**—Lists number and size of air-filter units for filter-equipped warm-air furnaces and blowers of 166 mfrs. 50-page booklet. Owens-Corning Fiberglas Corp, Wayne Bldg, Toledo 1, Ohio.

A21 **FORCE-FLO HEATERS** — For hard-to-heat places where space and appearance are important. Quiet operation. 8-page bulletin DS-314 gives performance data, dimensions, capacities. Trane Co, La Crosse, Wis.

A22 **AIR DISTRIBUTION**—High-pressure dampers and outlets permit ventilation directly from main h-p duct. 4-page bulletin F 4960 gives noise-level, pressure-drop, performance data. Barber-Colman Co, Rockford, Ill.

A23 **CONDENSIFILTER** — Dehydrates and cleans compressed air. 30 cfm at 100 psi rated capacity. 2-page bulletin B30 shows components, specifications. Hankison Corp, 365 Renton Bldg, 1501 Beaver Ave, Pittsburgh 33, Pa.

A24 **ELECTRIC AIR FILTER**—Cleans air with 90% efficiency. Standard and custom-built units. Capacity 1330 to 80,000 cfm. 8-page bulletin 20M-51 gives principle of operation, capacities, dimensions, specifications. Trion, Inc, 1000 Island Ave, McKees Rocks, Pa.

A25 **CEILING OUTLETS** — *Venturi-flo* units. 18-page catalog, F-4085-1. Announces flo-lite combination of engineered air distribution and interior lighting. Photos, specifications, performance data. 50 to 12,000 cfm. Barber-Colman Co, Air Distribution Div, Rockford, Ill.

A26 **AIR HEATERS** — Portable and built-in models for comfort heating. Convection, blower, duct and radiant types. 4-page folder F-1530, photos, specifications. Edwin L Wiegand Co, 7731 Thomas Blvd, Pittsburgh 8, Pa.

A27 **UNIT HEATERS**—*Torridor* blower type. 100,000 to 1,500,000 btu, for heating large spaces. Mount on floor, wall, or ceiling. 56-page catalog DS-327-A gives specifications, outlet arrangement, mixing and intake boxes, steam or hot water capacities. The Trane Co, La Crosse, Wis.

A28 **PRODUCTS BULLETIN**—36-page condensed catalog PB-290 of the full line of Trane air conditioning, heating, ventilating and heat transfer equipment. Trane Co, La Crosse, Wis.

BOILERS AND AUXILIARIES

B1 **COAL STOKERS**—Shows how the automatic respirator device in Combustioneer stokers use pneumatic hydraulic pressure to control air supply. 4-page bulletin No. R-105. Steel Products Engrg Co, Springfield, Ohio.

★ **FACILITIES REPORT**—An illustrated report, listing production facilities and equipment for handling war contracts and subcontracts is available. Company's management, employees, history, products, railroad facilities etc, also described. 18-page booklet No. HF121. Hapman-Dutton Co, 630 Gibson St, Kalamazoo, Mich. ★ Write direct to manufacturer on company stationery giving name and title.

B2 **AUXILIARIES** — The Thermix Corp offers a brief report on their activities, principals and their products. Also contains a list of field men and a partial list of Thermix projects. 36-page booklet. Thermix Corp, Greenwich, Conn.

B3 **STOKERS**—Roto stoker for firing refuse, coal or combination Spreader-stoker type. Diagrams, installation photos. 22 pages. Detroit Stoker Co, General Motors Bldg, Detroit 3, Mich.

B4 **STEAM GENERATORS** — Powermaster units for steam or hot water. High or low pressure, 15 to 500 hp, oil or gas fired. Bulletin 1218, Orr & Sembower, Inc, Morgantown Rd, Reading, Pa.

B5 **ASH AND FLYASH HANDLING SYSTEMS**—Question and answer booklet on hydraulic and pneumatic equipment. Also covers disposal schemes. Diagrams, drawings. Beaumont Birch Co, 1505 Race St, Philadelphia 2, Pa.

B6 **BURNERS**—For oil or gas. 16-page bulletin pictures and describes *dry atomization* principle; shows installations. Lammert & Mann Co, 1753 Walnut St, Chicago 12, Ill.

B7 **DUST RECOVERY**—28-page catalog No. 101. Explains need for dust recovery, illustrates line of precipitators and collectors; fundamentals of operation, diagrams, installation photos. Buell Engineering Co, Inc, 70 Pine St, New York 5, N. Y.

B8 **PACKAGED BOILERS**—2 models, capacity 4100 to 23,500 lbs of steam per hr, at 160 psi. 6-page folder gives construction specifications, advantages, applications. Wm Bros Boiler & Mfg Co, Boiler Div, 1057 10th Ave SE, Minneapolis 14, Minn.

B9 **STEAM GENERATORS** — Packaged construction and operation. Photos, cut-away schematics, charts for data, dimensions, specifications, test results. 20 to 600 boiler hp, 700 to 20,700 lbs steam per hr at 212 F. 16-page catalog with fold-out cover. Superior Combustion Industries, Inc, 1475 Broadway, New York 18, N. Y.

B10 **OIL BURNER GUIDE**—"Oil Burning Manual of Information" is a guide to proper installation and operation of oil-burning equipment. Includes among 20 selected headings such important tables as air flow through airports, available draft, excess air, boiler pressure and flue gas temperature. 4 pages. Cleveland Fuel Equipment Co, 7316 Associate Ave, Cleveland 9, Ohio.

B11 **PACKAGED BOILER**—Describes the Ticosteam generator, a packaged steam power plant with a 3-pass forced draft taper design resulting in maximum heat absorption and fast steaming. Design features are included. 6-page bulletin No. B-3100. Titusville Iron Works Co, Titusville, Pa.

B12 **STEAM GENERATORS**—Package units. 250, 525, and 825 psi. 10,000 to 30,000 lb/hr. 20-page catalog PG-51-2 gives dimensions, diagrams, control systems. Foster Wheeler Corp, 165 Broadway, New York 6, N. Y.

To order catalogs, use cards on page 173

B13 **BURNERS**—*Hev-E* gas and combination gas and oil units, allow quick change from one fuel to the other. 4-page bulletin AD-101 presents features and advantages of 5 models. Photos, capacities. Cleaver-Brooks Co, Hev-E Oil Burner Div, 326 E Keefe Ave, Milwaukee 12, Wis.

★ **GAS SCRUBBERS** — For product recovery, gas purification. 6-page bulletin 203-B gives uses, operation, construction, capacities. ★ Write direct on company letterhead to Peabody Engineering Corp, 580 Fifth Ave, New York 19, N. Y.

B14 **DRAFT REGULATION** — Engineering research bulletin shows effect of draft on gas fired boilers with burner input 400,000 btu per hr and over. Graphs, characteristics of barometric draft control. H. D. Conkey Co, Dept 158, Field Control Div, Mendota, Ill.

B15 **THERMAL COAL DRYER**—Capacities 15 to 75 tons per hr. *Vertiveane* unit is convection dryer of forced-draft type. 8 - page bulletin gives construction, dimensions, uses. Robert Holmes & Bros, Inc, 510 Junction Ave, Danville, Ill.

B16 **BOILER TRIM** — Accessories, alarms, gauges, trycocks. 16-page catalog 700 has cut-away diagrams, dimensions, construction features, ordering instructions. Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

B17 **WATER ALARM** — Signals high and low boiler-water levels. Connects directly to steam and water spaces of boiler drum, needs no water column. 4-page bulletin 493 gives operating principle, photos, specifications. Northern Equipment Div, Continental Foundry & Mach Co, Erie 2, Pa.

B18 **DUST COLLECTORS**—Cloth-tube type. Capacities upward from 252 cfm, assembled and knocked-down models. Specifications, cutaway views, installations. 36-page catalog 72-B. American Wheelabrator & Equipment Corp, Mishawaka, Ind.

B19 **STEAM GENERATORS**—10 to 100 rated hp, self-contained units employ forced recirculation. 12-page booklet gives specifications, operation, installation photos. Clayton Mfg Co, El Monte, Calif.

B20 **WATER TUBE BOILERS**—Small to medium capacity. Underfeed, spreader stoker, oil or gas firing. 4-page bulletin has dimensions, diagrams. Dominion Bridge Co, Ltd, P O Box 280, Lachine, Que.

B21 **OIL BURNERS** — *Hev-E-Oil* unit handles any fuel oil not requiring heating during storage and pumping. 8-page catalog gives specifications, descriptions, photos. Cleaver-Brooks Co, 326 E Keefe Ave, Milwaukee 12, Wis.

B22 **FUEL DEHYDRATOR**—For diesel fuel, gasoline, kerosene and fuel oils. Capacities to 600 gpm. 2-page bulletin gives specifications. Bowser, Inc, Fort Wayne, Ind.

B23 **DUST FILTER**—Cloth type unit maintains uniform suction, reverses air flow to remove dust. 4-page bulletin 101 describes operation. W W Sly Mfg Co, 4700 Train Ave, Cleveland 2, Ohio.

B24 **REFRACTORIES**—Fire clay, high alumina, and silica brick, refractory specialties. 104-page pocket-sized catalog gives characteristics, recommended applications, estimating data. Mexico Refractories Co, Mexico, Mo.

B25 **REFRACTORIES**—Technical information, supplemented with charts, tables and illustrations, on Carbofrax bonded silicon carbide refractories, Alfrax bonded electrically fused alumina refractories, Mullfrax bonded electric furnace mullite refractories, and Monofrax fused cast refractories. 20-page booklet. Carborundum Co, Refractories Div, Perth Amboy, N. J.

B26 **COAL FLOW STOKERS** — Two bulletins describing the PCF series Powderam coal flow stokers and the CF coal flow stokers are available. Both these underfeed stoker designs feed coal directly from the bunker to the combustion chamber of the boiler or furnace at a rate to meet exact load demand. 4 pages each. Iron Fireman Mfg Co, 3170 W 106th St, Cleveland, Ohio.

B27 **SUSPENDED ARCHES**—Descriptive of the new Reintjes firing arch developed primarily to serve as a tight connection between the fan-tail nosing and the chill walls of open-hearth furnaces. Also applicable for use in glass tanks and melting furnaces, including incinerators and flues. 4-page bulletin No. 651. Geo P Reintjes Co, 2517-19 Jefferson St, Kansas City 6, Mo.

B28 **STOKERS**—Data on Detroit Rotostokers for steam generators including packaged types given in Bulletin No. 501. Detroit Rotograte stokers and how they serve a particular plant are described in Bulletin No. 49. 4 pages each. Detroit Stoker Co, General Motors Bldg, Detroit 2, Mich.

B29 **PACKAGED STEAM GENERATORS**—A discussion of Steam-Pak packaged steam generators, high pressure operation for processing applications. Operating and installation advantages as well as specifications and ratings are given. 12-page bulletin No. ID-51. York Shipley, Inc, York, Pa.

B30 **PULVERIZERS** — Illustrates and describes Jeffrey swing hammer pulverizers and crushers made in two types—Type A for general purposes, and Type B for finer reduction, breakdown and heavier work. 36-page catalog No. 837. Jeffrey Mfg. Co, 932 N 4th St, Columbus 16, Ohio.

B31 **DUST COLLECTION**—Covers the American Blower Series 342 precipitator for fly ash, cinders, and industrial dusts. Selection data, performance factors, assembly arrangements, dimensions and physical data included. 12-page bulletin No. 1728. American Blower Corp, Detroit 32, Mich.

B32 **WALLS AND ARCHES** — Gives description of Laclede suspended arches and sectionally supported walls

and their application to all types of furnace enclosures. Technical data included. 32-page catalog No. 4. Laclede-Christy Co, 3600 Forbes St, Pittsburgh 13, Pa.

B33 OIL PREHEATER — Discusses Hauck electric oil heaters with automatic control of oil temperatures for heating heavy grades of fuel oil. 4-page folder No. 709. Hauck Mfg Co, 124-136 10th St, Brooklyn 15, N. Y.

B34 PACKAGED STEAM GENERATORS—Two bulletins on steam generators available. 8-page catalog No. 51 covers Cyclotherm package steam generators. 6-page bulletin No. P-1 gives data on automatic steam generators. Cyclotherm Corp, Oswego, N. Y.

ELECTRICAL CONTROLS

C1 CAM PROGRAMMER THERMOMETERS — For time-temperature control. Single and dual models, electric and pneumatic control. 16-page catalog 6020 gives uses, advantages, specifications. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Ave, Philadelphia 44, Pa.

C2 THERMAL CONTROLS — *Thermoswitch* controls, sensitive only to heat. 52-page catalog No. 400 describes design, operating characteristics and installation of 10 variations on basic device. Fenwal Inc, Ashland, Mass.

C3 TEMPERATURE SCANNER — *ElectroniK* scanning recorder automatically monitors up to 270 temperature points, records those that deviate beyond preset limit. 4-page data sheet 10.0-9 gives description, operation. Minneapolis - Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Ave, Philadelphia 44, Pa.

C4 PRESSURE CONTROLLER—Non-indicating *pressure pilot*. Ranges 0-40 up to 0-1500 psi. 8-page bulletin 16-1 gives specifications, dimensions, design features. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Ave, Philadelphia 44.

C5 WARNING SYSTEM—*Multalarm* units indicate emergency conditions. Audible and visual signs, automatic reset. Any number of stations and alarms. 4-page bulletin 7411 gives details. Automatic Control Co, St Paul 4, Minn.

C6 STRIP CHART RECORDER—Explains how up to 6 permanent records of industrial processes may be obtained on the new Multipoint Capacilog strip chart recorder. Complete specifications and listing of models are included. 4-page bulletin No. MPC-1. Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

★ **MOTOR CONTROLS** — Condensed information, dimensions and prices of the more popular items in the Allen-Bradley line of motor controls. A special a-c and d-c index is included along the margins of each page. 92-page catalog. Allen-Bradley Co, 118 W Greenfield Ave, Milwaukee 4, Wis. ★ Write direct to manufacturer on company stationery giving name and title.

C7 MULTI-CIRCUIT TIMER—Details on a multiple circuit cycle timer for timing laundry and dry cleaning machinery operations, electrical display signs, industrial furnaces. Bulletin No. 142. Zenith Electric Co, 152 W Walton St, Chicago 10, Ill.

C8 PHOTOELECTRIC ALARM—Data on a photoelectric intrusion alarm set P1A which provides a protecting wall of invisible light across any space up to 50 ft. Bulletin No. PI-511. Photoswitch, Inc, 77 Broadway, Cambridge 42, Mass.

C9 LOAD-BREAK OIL SWITCHES —Type "RA" for 400 amp, 600, 7500, 15,000 and 23,000 volts. For primary distribution systems. 44-page bulletin No. DB-51. Construction details, photos, diagrams, dimensions. G & W Electric Specialty Co, 7780 Dante Ave, Chicago 19, Ill.

C10 ELECTRIC CONTACT CONTROLLERS—Vane type. 2- or 3-position, control, 2½ to 30 amps. Used with thermometers, pressure gauges, potentiometers and millivoltmeters. Charts, dimensions. 16-page catalog No. 8000. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

C11 SERVOMECHANISM TECHNIQUES — Basic information on analysis of automatic control problems in industrial process instrumentation. Advantages of the method are discussed. 24-page booklet No. G-56. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

★ **MICROMETER POSITIONERS** — For zero adjusters, range suppressors, or control point positioners for relay control circuits. 4-page folder No. 63 gives applications, descriptions, dimensions. ★ Request on company letterhead, indicating your name and title. Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

C12 METER - RELAY CONTROLS — Electromagnetic locking contacts, automatic shutoff control; for furnace temperature, machine speed, communications equipment control. Also controlling pyrometers and accessory equipment. 4-page Simplytrol bulletin No. G-51. Assembly Products, Inc., Chagrin Falls 1, Ohio.

C13 MINIATURE ELECTRONIC CONTROL — For pressure, temperature, flow and level in power and process industries. With or without recorder. Photos, diagram, dimensions. 4-page bulletin No. A-701. Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio.

For copies of catalogs use cards, page 173

CONTROLS, MECHANICAL

D1 TEMPERATURE REGULATORS —Presents data on precision pressure regulators, temperature regulators and combination pressure and temperature regulators. Includes dimensions, applications, capacity, engineering tables and specifications. Bulletin No. 751. O C Keckley Co, 400 W Madison St, Chicago 6, Ill.

D2 LIQUID LEVEL CONTROLS — Contains facts about liquid level controls for special applications, float controls, and related devices. Valuable in solving special boiler water level control, liquid level control and relief valve problems. 20-page catalog No. SC-1. McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.

D3 GOVERNORS—"How To Get The Most Out of Your Governor" gives a complete presentation of centrifugal governor problems and applications. Illustrated with photographs and schematic drawings. Details on adjustment, care and maintenance are also included. 12-page booklet. Pierce Governor Co, Inc, Anderson, Ind.

D4 LIQUID HANDLING EQUIPMENT—Folder, "1001 Ways That Bowser and Its Subsidiaries Serve You Every Day," acquaints the reader with the company's very extensive line of liquid handling equipment. 12-page folder. Bowser, Inc, Fort Wayne 2, Ind.

D5 CHRONOFLO TELEMETER — Distance transmission of information and controls over 2-wire electrical circuit. Measurement of flow of liquids and gases, proportional control of feeds, pressure and temperature telemetering. Photos and diagrams. 8-page bulletin No. 230-H4. Builders-Providence, Inc, 354 Harris Ave, Providence 1, R. I.

D6 POSITIONING CONTROL—*Rotomotor*, pneumatic gear-driven operator for heavy-duty service. Dimensions, operation methods, applications. 8-page bulletin No. C-1. Conoflow Corp, 2100 Arch St, Philadelphia 3, Pa.

D7 LIQUID LEVEL CONTROLLERS —Internal and external float cages. Ratings 125 to 300 lb. Dimensions, construction, photos, Specification sheet No. 412-2. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

D8 CONTROL EQUIPMENT—Thermostats, motor-operated valves and accessories for heating, ventilating and air conditioning. Photos, dimensions, selection charts. Control catalog No. F-1753-3. Barber-Colman Co, Rockford, Ill.

D9 HYDRAULIC REMOTE CONTROLS — Single-tube balanced system, no outside source of power. Capacity to 400 in-lbs on pressure stroke, 125 in-lbs on return stroke. 4-page bulletin No. 20-106. General description, operating principles, diagrams, photos. C E Hohl, Sales Engineer, Sperry Products, Inc, Danbury, Conn.

D10 pH AND CONDUCTIVITY RECORDERS AND CONTROLLERS —Covers pH, oxidation-reduction potential, electrolytic conductivity. Operation, applications, specifications, dimensions, photos, descriptions. 40-page revised catalog No. 15-16. Minneapolis-Honeywell Regulator Co, Brown Instrument Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

D11 VARIABLE SPEED DRIVE—Describes the Type 4C miniature variable speed drive with push rod radio control. Force required to operate push rod at zero speed and at full load is 6 lbs. 1-page bulletin No. 4C. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

D12 VISUAL CONTROL BOARDS — Shows how visual control boards may be used to visualize operating effectiveness at a glance at any hour of any day. Typical applications given. 4-page bulletin No. 159-3. Visi-Trol Corp, 21460 W Eight Mile Road, Detroit 19, Mich.

D13 FLOW SIGNAL TRANSMITTER —Standard assemblies for pressure differentials from 5.5 in. water to 100 psi, static pressures to 1500 psig. Pneumatically operated. Cutaway photos, application diagrams, ordering information. 8-page bulletin No. 2551. Hagan Corp, Hagan Bldg, Pittsburgh 30, Pa.

D14 STEAM HEATING CONTROL—Electric moderator system operates on pressure difference. For medium to large-sized buildings with 2-pipe Webster orificed systems and low-pressure steam. 5 bulletins, No. B-290A, B-900-4A, B-960, B-291A, B-161, give complete information. Warren Webster and Co, Camden 5, N. J.

D15 CONTROL VALVES — Pressure master controls, desuperheaters, temperature master controls, water-regulating valves, feedwater heaters, etc. 12-page bulletin No. S-196-C describes complete line power-plant equipment. Flow diagrams, dimensions. Swartwout Co, 18511 Euclid Ave, Cleveland 12, Ohio.

D16 COMBUSTION CONTROL—Installation at Falstaff Brewing Corp. Diagrams, photos showing boiler plant modernization. 8-page bulletin No. R-6. Hays Corp, Michigan City, Ind.

D17 BOILER WATER CONTROLS — Feeders, low-water cutoffs, pressure relief valves for boilers, heaters, pumps. Illustrations, capacities, service recommendations. 8-page small size circular No. S-18B. McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.

D18 PORT VALVES—For gas, air, oil, steam and water regulation. 12-page catalog 1800. *Air-O-Motor* diaphragm operators with North American

adjustable port valves. Specifications, mounting dimensions. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Aves, Philadelphia 44, Pa.

D19 **COMBUSTION CONTROL** — For oil and gas-fired burners. Air-operated. 24-page bulletin 1023 shows 9 typical firing methods and 16 major control equipment components. Diagrams, installation data. Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio.

D20 **REGULATOR** — Direct-acting, finger-type regulator controls voltage, frequency and current. 12-page bulletin 505.00 shows circuits, applications. Electric Regulator Corp, 50 Day St, S Norwalk, Conn.

D21 **CONTROLLING PYROMETERS**—9 temperature ranges from —200 to +3000 F. 4-page bulletin G-2 shows functions, applications. Assembly Products, Inc, Chagrin Falls 5, Ohio.

D22 **TEMPERATURE CONTROL** — *Pyr-O-Vane* unit features snap action, 1-, 2- or 3-position electronic control. 4-page specification sheet 114 gives specifications, description, photos. Minneapolis - Honeywell Regulator Co, Brown Instrument Div, Station 40, Wayne & Windrim Aves, Philadelphia 44, Pa.

D23 **PUMP CONTROLS**—For 2 or more pumps in pressure-tank systems. 4-page bulletin 1510 explains *Duotrol* pressure and float control. Charts, diagrams. Automatic Control Co, 1005 University Ave, St. Paul 4, Minn.

ELECTRICAL EQUIPMENT

E1 **ELECTRICAL MEASURING INSTRUMENTS**—Gives information on how to select electrical measuring instruments and solves four typical selection problems. Complete lines of portable, switchboard, panel, recording and socket instruments are also described and illustrated, and functions of each are explained. 30-page booklet No. B-4696. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E2 **PACKAGED ELECTRIC POWER** —Outlines methods of obtaining electric power equipment for quick expansion at low cost and with a minimum of critical materials. Includes 52 photographs and diagrams. 24-page bulletin No. 5600. General Electric Co., Apparatus News Bureau, Schenectady 5, N. Y.

E3 **STORAGE BATTERIES** — Three data sheets give design specifications for single, double, and triple-tier racks for installing 12, 24, 30, and 60-cell batteries. Each sheet comprises keyed line drawings and dimension tables of racks to be used with different cell sizes. Sheets Nos. 72056, 72057, and 72074. Gould-National Batteries, Inc., Trenton 7, N. J.

E4 **OIL SWITCHES**—5000 v single throw switches, rated 200, 400 and 600 amp; ball and groove high pressure contacts give full-load break 8-page bulletin No. DC51 has photos dimensions. G & W Electric Specialty Co, 7780 Dante Ave, Chicago 19, Ill.

E5 **MOTORS** — 4-page bulletin No. MU-94 outlines line of motors giving characteristics, ratings, applications. Single and polyphase, also multi-speed motors. Wagner Electric Corp, 6400 Plymouth Ave, St. Louis, Mo.

E6 **ENCLOSED MOTORS**—Fan cooled and non-ventilated types. Suitable for use where there is dust, dirt, fly ash, corrosive gas. 6-page folder No. 51B7225 shows construction, gives ratings and dimensions. Allis-Chalmers Mfg. Co, 952 S 70th St, Milwaukee, Wis.

E7 **ROTARY PACKET SWITCHES**—Control electric circuits operating at 10 to 500 amp, 115 to 600 v ac, and up to 250 v dc. 12-page folder gives ratings, dimensions, mounting types. Appliance Control Div, Arrow-Hart & Hegeman Electric Co, Hartford 6, Conn.

E8 **INDUCTION HEATING**—12-page bulletin No. GEA-5679 describes forging, hardening, brazing, and annealing applications at 1000, 3000, and 10,000 cycles. Explains components and requirements, gives photos, ratings. General Electric Co, Schenectady 5, N. Y.

E9 **SIGNALING DEVICES** — Chimes, bells, buzzers, fluorescent lamp ballasts, push buttons. 8-page bulletin gives complete catalog information. Lee Electric Co, 132 Beckwith Ave, Paterson, N. J.

E10 **LIMIT SWITCHES** — Rotating, lever and track types. 3 bulletins, GEA-5704, -5705, -5707 give uses, operating features, dimensions, ratings. General Electric Co, Schenectady 5, N. Y.

E11 **MOTOR CONTROL CENTER** — NEMA size 1 through 5 starter units for ac motors up to 200 hp. 24-page bulletin GEA-4979A gives features, components, specifications, selection charts. General Electric Co, Schenectady 5, N. Y.

E12 **SWITCH AND OUTLET BOX** — Wall chart gives catalog nos., sizes, no. and sizes of conductors permitted in each box. Publication 18-81. General Electric Co, Bridgeport 2, Conn.

E13 **RESISTORS AND CONTROLS**—Standard stock items. Controls, switches, line-voltage regulators, rheostats, resistors, etc. Catalog 51. Clarostat Mfg. Co, Inc, Dover, N. H.

E14 **SERVO AMPLIFIERS** — Miniature, hermetically-sealed, plug-in electronic amplifiers to control 400-cycle, 2-phase servo motors. Specifications, applications, connection diagrams. Two 4-page bulletins describe models SA104H and SA112H. Servomechanisms, Inc, Post & Stewart Aves, Westbury, N. Y.

E15 **TESTING AND MEASURING EQUIPMENT** — For laboratory and production line use. 80-page catalog GEC-1016 gives reference summary of complete line. Photos, diagrams, specifications and prices. General Electric Co, Schenectady 5, N. Y.

E16 **LOAD RELAY** — Mercury plunger type. 2-page bulletin No. 860 shows control hookup for air-raid siren. H-B Instrument Co, 2633 Trenton Ave, Philadelphia 25, Pa.

E17 **INDUSTRIAL LIGHTING**—Aimed at the industrial plant operator, booklet analyzes fluorescent, mercury vapor, and incandescent lighting as to type of light, efficiency, lamp life, etc. Special lighting for special areas illustrated. 16-page booklet No. B-4727. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E18 **FLUORESCENT LAMPS** — Describes Slimline fluorescent lamps including such details of construction as the triple-coil cathode, the shielded cathode, the treated exhaust tube and aluminum bases. 12-page booklet No. 1b-192. General Electric Co, Lamp News Bureau, Nela Park, Cleveland 12, Ohio.

E19 **MOTORS**—Illustrations and data given on Wagner single-phase and polyphase motors. 4-page folder No. MU-94. Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo.

E20 **INSTRUMENT TRANSFORMERS** —Buying information on G-E indoor and outdoor potential transformers, current transformers, metering outfits, potential and current portable transformers. 94-page bulletin No. GEA-4626. General Electric Co, Schenectady 5, N. Y.

E21 **CIRCUIT BREAKER**—Details on the new DB-50 low voltage air circuit breaker for application in low-voltage industrial and commercial power distribution systems and similar uses. 8-page booklet No. B-4740. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E22 **SWITCHGEAR** — Unitized, low voltage, metal-enclosed units for indoor and outdoor installations. 20-page booklet B-5282 outlines applications, describes types BD and DA drawout *De-Ion* circuit breakers and associated equipment. Specifications, ordering information. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E23 **FRACTIONAL HP MOTORS** — Open drip-proof and totally-enclosed fan-cooled models, light-weight. New *Form G* line. 16-page booklet GEA-5567 gives description, photos. General Electric Co, Schenectady 5, N. Y.

E24 **MOTOR - GENERATORS** — Low-voltage, dc units for electrolytic processes. Sleeve- and ball-bearing types. 14-page bulletin 20-210 pictures construction details. Electric Products Co, 1725 Clarkstone Rd, Cleveland 12, Ohio.

E25 **INDUCTION MOTORS** — *Life-Line*, ac induction units, 20 to 700 hp. 20-page booklet B-4731 shows design and application features, describes construction and mountings. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E26 **STANDBY EMERGENCY POWER** —Requirements, types available, controls for automatic operation. Article from *E M Synchronizer* No. 35 has diagrams, installation photos, additional articles on turbine-generators. 20 pages. Electric Machinery Mfg Co, 1331 Tyler St NE, Minneapolis 13, Minn.

★ **ELECTRONIC PARTS** — Tubes, panel meters, relays, switches, condensers, resistors, etc. 1100-page catalog gives specifications, dimensions, prices for over 75,000 items. ★Write direct on company letterhead. Milo Radio & Electronics Corp, Dept PP, 200 Greenwich St, New York 7, N. Y.

E27 **BATTERY CHARGERS** — Single-circuit, motor-generator type for industrial batteries. 4-page bulletin 10-210 describes *Type S* line. Photos, specifications. Electric Products Co, 1725 Clarkstone Rd, Cleveland 12, Ohio.

★ **INSULATORS**—*Lava* units made to customer's design. 2 booklets detail properties, grades, thermal resistance, etc. 4-page folder on insulators for electronic tubes; 8-page folder on industrial insulators. ★Write direct to M Kirchberger & Co, Inc, 1425 37th St, Brooklyn, N. Y.

E28 **ELECTRICAL INSULATION** — 16 pages of data sheets list leading manufacturers and suppliers of Class H components, give specifications for silicone-varnished glass cloth and tape. Reference Nos. G 16-A, B, C, D, and G 20. Dow Corning Corp, Midland, Mich.

E29 **POWER - CONVERSION UNITS** —Metallic rectifier type. 0.75 to 25 kw at 250 and 125 volts dc. Specification guide for dc power supplies and exciters. Photos, drawings and efficiency charts. 8-page booklet No. GEA-5658. General Electric Co, Schenectady 5, N. Y.

E30 **CAPACITORS** — Fixed paper dielectric types. Description application, tables of prices and data 16-page booklet No. GEC-809. General Electric Co, Schenectady 5, N. Y.

E31 **FLUORESCENT LAMP BALLASTS** — 20-page non-technical review of ballast use and history, booklet No. GEA-5731. Also 4-page brochure No. GEA-5672 describing ballast soundrating. General Electric Co, Schenectady 5, N. Y.

★ **CABLE CONNECTORS** — Solderless pressure type. Lists 3 lines of fittings for copper conductors from No. 14 through 2,000,000 circular mils. Photos, drawings, dimensions, 56-page bulletin No. 66. ★Write direct, on company letterhead, to The Thomas & Betts Co, Inc, 46A Butler St, Elizabeth, N. J.

E32 **VERTICAL INDUCTION MOTORS** — From 60 hp at 200 rpm to 800 hp and larger at 1800 rpm. Data on ratings, construction and types. 4-page bulletin No. 05B7629. Allis-Chalmers Mfg Co, 932 S 70th St, Milwaukee, Wis.

E33 **TOTALLY - ENCLOSED MOTORS** — With air-to-water heat exchangers. 4-page bulletin No. 05B7682 gives construction, cooler arrangements and water-requirement estimation. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E34 PROTECTIVE LIGHTING — Complete plans for outdoor industrial lighting with power distribution, control systems, mounting methods, 24-page booklet No. B-4791. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E35 LINEAR TRANSDUCERS — Differential transformers measure motion from a few micro-inches to 5 in. Generate ac voltage signal proportional to armature position change. Operation, stock types, electrical data. Data sheets No. 55 and 56, and wiring diagram. Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

E36 SYNCHRONOUS MOTORS—Low-speed, coupled-type pedestal-bearing motors, 100 hp and larger at 450 rpm or less. 1.00 power factor or 0.8 or better leading power factor. 6-page bulletin No. 05B7648. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E37 SCREEN - BOOTH FILTERS — For electronic noise-suppression. Remove high-level interference from electrical power-distribution circuits. Light, medium or heavy-duty. Catalog No. 201 gives dimensions, specifications. Tobe Deutschmann Corp, 921 Providence Hwy, Norwood, Mass.

E38 MOTORS—Heavy-duty polyphase and single phase, 1/20 to 5 hp. 8-page catalog shows complete line, specifications, dimensions. Triad Engineering Corp, 450 E Ohio St, Chicago 11, Ill.

E39 DISCONNECT SWITCHES—Hook operated, for outdoor service, 6-page bulletin 5104 shows construction features, lists specifications, dimensions; ratings to 161 kv, 600 and 1200 amps. Delta-Star Electric Co, 2437 Fulton St, Chicago 12, Ill.

E40 TRANSFORMERS — Proposed AIEE guide for use of openly ventilated dry-type transformers with Class B insulation. 8-page bulletin 61X7088B gives recommendations on installation, inspection, operation, for ratings above 50 kva, 600 v. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E41 CAPACITORS — For service replacement. 28-page comprehensive catalog 200C gives dimensions, capacities, prices for tubular, electrolytic, paper, ceramic, etc capacitors. Cornell-Dubilier Electric Corp, Jobber Div, South Plainfield, N. J.

E42 GROUNDING SHEATH CONNECTORS — For shielded cables 2-piece compression type connector. 4-page data sheet S5 gives technical information, methods of installation. Thomas & Betts Co, Inc, 46A Butler St, Elizabeth, N. J.

E43 LAMPS — Fluorescent mercury type, for large area lighting. 400 w rating, with 4000 hr rated average life. 4-page bulletin A-6007 gives uses, specifications, coefficients of utilization. Westinghouse Electric Corp, Lamp Div, Bloomfield, N. J.

E44 LIGHTING BULLETINS—*See Better—Work Better.* 5 bulletins give graphic illustrations of benefits of adequate lighting in industrial installations. Photos, suggestions on lighting patterns, requirements for plant uses. General Electric Co, Lamp Div, Nela Park, Cleveland 12, Ohio

E45 ELECTRIC INSULATION — Varnishes, Glyptal alkyd resin, varnished cloths, sealing and filling compounds, silicones, 8-page bulletin CDL-35 has properties, applications, photos. General Electric Co, Chemical Div, Pittsfield, Mass.

E46 ELECTRONIC TUBES — For industrial and special purposes. Standard name brands. 28-page catalog EB lists specifications, prices. Milo Radio and Electronics Corp, 200 Greenwich St, New York 7, N. Y.

E47 FUSES — Plug, renewable, and one-time types. Also lubricating devices. Condensed catalog broadside PLB 300-C has photos, descriptions. Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.

E48 AUTOMATIC CHARGERS — For industrial trucks. Correct voltage from no load to full load, automatic shut-off when battery is charged. 6-page folder J-4594 gives features, theory, installation photos. Motor Generator Corp, DM-903, Troy, Ohio

E49 SQUIRREL - CAGE INDUCTION MOTORS—Up to 1750 hp at 1800 rpm. Special electrical modifications to suit requirements. 6-page bulletin No 05B7542A shows construction features, available ratings. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E50 INDUCTION FREQUENCY CONVERTERS — 3-phase equipment ¾ to 100 kw. Fundamentals, operation and construction features. Ratings and frame sizes. 4-page bulletin GEA 5637. General Electric Co, Apparatus News Bureau, Schenectady 5, N. Y.

E51 MOTOR - GENERATOR SETS—Motors, generators, transformers, diesels, air compressors. New and rebuilt. Three 8-page bulletins, No. 51 A, B, C, give partial stock list. Electric Equipment Co, PO Box 51, Rochester, N. Y.

E52 DISTRIBUTION TRANSFORMERS—Wound-type core, new insulation technique. Smaller unit with greater thermal capacity, better voltage regulation. Up to 25 kva. Dimensions, weights, construction features. Bulletin No. 61B7641. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E53 MOTIVE POWER STORAGE BATTERIES — Data sheets on servicing "sulfated" batteries. Six causes, eleven remedies. 2 pages. Gould-National Batteries, Inc, Trenton 7, N. J.

E54 MINIATURE STORAGE BATTERIES — Silver-zinc, rechargeable, constant voltage. Up to 6 times lighter, 5 times smaller than others with similar ratings. .032- to 500-amp discharge. Technical brochures No. 1 and 2, 4 pages each. Operation, applications, characteristics table, curves. Yardney Electric Corp, 105-107 Chambers St, New York 7, N. Y.

E55 BATTERY CHARGER—For lead or Edison batteries. Needs no attention during charge. 4-circuit motor-generator - operated integral - control panel. 4-page bulletin No. B-11-220. Photos, dimensions. Electric Products Co, 1725 Clarkstone Rd, Cleveland 12, Ohio.

E56 INDUSTRIAL ELECTRONIC EQUIPMENT — Electronic tubes, test instruments, voltage stabilizers, transformers, tools, batteries, sockets. Complete catalog information. 212 pages. Allied Radio Corp, 833 W Jackson Blvd, Chicago, Ill.

E57 STARTING SWITCH—Data on a manual starting switch for fractional horsepower motors. Illustrated with photographs of typical installations. 8-page bulletin No. 600. Allen-Bradley Co, Milwaukee 4, Wis.

★ **BUS DUCT**—Describes types of bus duct and accessories available. Presents application and test data, specifications, and information on pricing a typical bus duct installation. 68-page manual No. B-4272A. Westinghouse Electric Co, Box 2099, Pittsburgh 30, Pa. ★Write direct to manufacturer on company stationery giving name and title.

E58 TRANSFORMERS—Technical information in the form of detailed drawings, accuracy limits, ratio and phase angle curves on current, potential and metering transformers. 32-page bulletin No. S-501-B. Standard Transformer Co, Warren, Ohio.

E59 FAN-COOLED MOTORS — Describes types of construction and ratings of totally-enclosed, fan-cooled motors with tube-type, air-to-air heat exchangers. Cross-section view of horizontal motor construction features also included. 6-page bulletin No. 05B7150A. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

E60 CARBON BRUSHES — Illustrates and describes the fundamental considerations given to the design, application, and manufacture of carbon brushes and includes a section on brush terminology. 28-page bulletin No. GEA-5597. General Electric Co, Schenectady 5, N. Y.

E61 ELECTRICAL FITTINGS—Manual contains illustrations, catalog number, price, and weight of the complete line of O Z electrical fittings. Indexed by photo, product name and catalog number. O Z Electrical Mfg Co, Inc, 262 Bond St, Brooklyn, N. Y.

★ **CONDUIT AND CABLE FITTINGS** — Electrical conduit and cable fittings for all types of raceways are listed. Contains many charts of connector sizes and capacities, strain relief bushings, and ground fittings. 64-page bulletin No. 65. Thomas & Betts Co, Inc, Elizabeth, N. J. ★Write direct to manufacturer on company stationery giving name and title.

E62 TERMINALS — Technical information on a new line of self-insulated Sta-Kon terminals with insulation grip. Applications, advantages, methods of installation included. 2-page bulletin No. S4. Thomas & Betts Co, Inc, 44 Butler St, Elizabeth 1, N. J.

E63 SECTIONALIZING BREAKER — Describes the Heinemann Type 400 control for banked secondary transformer systems. Features, advantages, how to order information. 4-page bulletin No. 2015. Heinemann Electric Co, OSE Dept, Trenton, N. J.

E64 BATTERY CHARGING EQUIPMENT—Presents information on motor-generator fully automatic battery-charging equipment. 4-page bulletin No. 11-210. Electric Products Co, 1725 Clarkstone Road, Cleveland 12, Ohio.

E65 MOTOR - POWER STORAGE BATTERIES—Here is a pocket-sized handbook of technical instructions and engineering data on the care of motive-power storage batteries. Includes sections on battery charging; care and operation; maintenance and repairs; parts; and technical data. 56-page handbook. Gould-National Batteries, Inc, Trenton 7, N. J.

E66 CIRCUIT BREAKER PANELBOARDS—Covers De-ion circuit breaker panelboards for the control and protection of lighting, appliances, and other power applications in capacities from 10 to 600 amperes. Also describes the circuits that supply them. 20-page booklet No. B-5260. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

E67 POWER PLANT COMMUNICATION SYSTEMS — A discussion of the Gai-Tronics high and low level voice communication system designed expressly for power plants. Discussion includes: what it will do for you, how it operates, what it consists of, cost, and uses of system. 20-page bulletin. Gai-Tronics Corp, 412 Washington St, Reading, Pa.

E68 FAN-COOLED MOTORS—Standard and explosion-proof designs. Tube-type, air-to-air heat exchangers; ratings from 40 hp at 600 rpm through 800 hp at 3600 rpm. 6-page bulletin 51B7149B shows construction and installations. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee.

E69 EXPLOSION-PROOF MOTORS — 3 to 100 hp (fan-cooled), and ½ to 2 hp (non-ventilated). Enclosed external air passages eliminated. Bulletin 51B7286A gives details. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee.

E70 VARIABLE-SPEED DRIVES — Five types of all electric drives, ¾ to 200 hp. Unlimited speed selection over entire range. 8-page bulletin D2311 gives non-technical explanation, shows hp and torque characteristics. Reliance Electric & Engrg Co, 1088 Ivanhoe Rd, Cleveland 10, Ohio.

E71 CUBICLE SWITCHGEAR—Industrial and station type designs. Built-in airblast breaker. Factory-as-

sembled, completely wired. 16-page bulletin P 012-3058 shows construction, ratings, specifications. Brown Boveri Corp, 19 Rector St, New York 6, N. Y.

E72 **INSTRUMENT TRANSFORMERS**—Indoor and outdoor, potential and current types, plus metering outfits. 94-page catalog GEA-4626E gives ratings, ASA accuracy classifications, prices. General Electric Co, Schenectady 5, N. Y.

★ **ELECTRICAL DATA BOOK**—For architects and engineers, 330-page revised edition, book B-2161-E gives details on power plant, electrical distribution, utilization and accessory equipment. Dimensions, specifications, applications. ★Request direct, not from POWER, from your nearest Westinghouse Electric Corp district office.

To order catalogs, use cards on page 173

HEAT EXCHANGERS

F1 **AERO HEAT EXCHANGER**—4-page Bulletin No. 120 explains principles of operation, has cut-away diagram, installation photos. Niagara Blower Co, 405 Lexington Ave, New York 17, N. Y.

F2 **TUBES AND PLATES**—For condensers and heat exchangers. 44-page booklet No. B-2 discusses application and installation; for engineers responsible for selecting materials in marine, oil refining, and stationary steam plants. Tables of physical properties, microphotographs. American Brass Co, Waterbury 20, Conn.

F3 **CASCADE COOLERS**—*Pyrex* glass heat exchange tubes provide high corrosion resistance. 12-page bulletin PE-8 has photos, construction features, nomographs for calculating heat transfer requirements. Technical Products Div, Corning Glass Works, Corning N. Y.

F4 **FUEL OIL HEATERS**—Oil tank suction heaters. Steam type for heavy grades of fuel oil. Automatic temperature control. 6-page bulletin 714 shows construction, dimensions, capacities, photos. Hauck Mfg Co, 124 Tenth St, Brooklyn 15, N. Y.

F5 **HEAT EXCHANGERS** — 8-page bulletin illustrates basic components—heads, shells, and tube bundles, gives service recommendations. Superior Combustion Industries, Inc, Times Tower, Times Square, New York 18, N. Y.

F6 **HOT WATER GENERATOR** — Constant outlet temperature. 4 to 438 gpm. 8-page bulletin 22 gives capacities, steam requirements, specifications, operation and construction. Aerco Corp, Englewood, N. J.

COMPRESSORS AND ACCESSORIES

G1 **CENTRIFUGAL BLOWERS AND COMPRESSORS**—Data on multistage, single stage with end-suction, single stage with double-suction units. Capacities 1000 to 150,000 cfm, pressures to 150 psi and above. Photos, compression charts, formulas, constants. 52 pages. Bulletin 0500. DeLaval Steam Turbine Co, Trenton 2, N. J.

G2 **COMPRESSORS** — Heavy duty, slow speed, water cooled, variable volume. 2-stage duplex, horizontal type. Pressures 70 to 500 lb, using 60 to 1000 hp. Cross-section digarams. 8-page bulletin No. 222. Bury Compressor Co, 1722 Cascade St, Erie, Pa.

G3 **BLOWERS**—And chemical processing equipment. Axial-flow, positive-pressure blowers from 143 to 5920 cfm, 700 to 3450 rpm. 12-page bulletin No. 51759. Read Standard Corp, 270 Lexington Ave, New York 17, N. Y.

G4 **ROTARY COMPRESSORS**—With eccentrically mounted rotor. 4-page bulletin No. C-6 has diagrams, installation photos, gives principles of operation. Fuller Co, Fuller Bldg, Catasauqua, Pa.

INSULATION, HEAT, COLD AND VIBRATION

H1 **HIGH TEMPERATURE INSULATION** — Gives advantages and properties of Superex block insulation, backed up with conductivity and heat loss graphs as well as a recommended thickness table. Also shows shapes in which Superex can be furnished. 4-page folder. Johns-Manville, 22 E 40th St, New York 16, N. Y.

H2 **PERIMETER INSULATION** — Booklet, "The Story of Perimeter Insulation for Standard Heating Systems," serves as a guide to a better understanding of the nature, proper use and application of perimeter insulation. 20 pages. Owens-Corning Fiberglas Corp, Dept PI, Toledo 1, Ohio.

H3 **UNDERGROUND CONDUIT**—Describes Therm-O-Tile underground pipe conduit, a complete conduit system for the permanent protection, support, and insulation of underground pipe lines, hot or cold. Sizes and specifications given. 8-page bulletin No. 511. H W Porter & Co, Inc,—Reid Hayden, Inc, 825 Frelinghuysen Ave, Newark 5, N. J.

H4 **VIBRATION ISOLATORS**—Covers a new line of All-Metal vibration isolators in a range of 8 to 16 lbs, 14 to 25 lbs, and 22 to 35 lbs. All units are available in the 6600 series, the 6645 series, the 6600R series, and 6645R series. Revised catalog No. 509. Barry Corp, 855 Pleasant St, Watertown 72, Mass.

H5 **INDUSTRIAL INSULATION** — Discusses Foamglas, a cellular glass insulation, for piping and process equipment. Included are properties; typical data for cold, intermediate, and hot applications; details for insulating tanks, ducts, removable covers, and tank heads; accessory materials; prominent users and distributors. 24-page bulletin No. G1839. Pittsburgh Corning Corp, 307 Fourth Ave, Pittsburgh 22, Pa.

H6 **HEAT AND VAPOR FLOW**—Revised edition of "Simplified Physics of Vapor and Thermal Insulation," contains information on heat and vapor flow, vapor permeability, condensation, conduction and density, convection, radiation and emissivity, reflection and absorption, plus many other subjects. 56 pages. Infra Insulation, Inc, 10 Murray St, New York, N. Y.

H7 **INDUSTRIAL CORK** — Describes characteristics and uses for cork compositions and natural cork. Includes tables giving physical properties of both types, sheet sizes and Dodge equivalents of government specifications for cork compositions, and standard taper cork sizes. 4-page bulletin. Dodge Cork Co, Inc, Lancaster 19, Pa.

H8 **HEAT INSULATION** — For temperatures to 1200 F; for tubes and pipes from ¼ to 72-in. dia, vessels from 72 in. to 60 ft, also flat surfaces. 8-page booklet gives physical characteristics, recommended thicknesses, efficiencies, photos. Kaylo Div, Owens-Illinois Glass Co, Toledo 1, Ohio.

H9 **REFRACTORY DATA** — 8-page booklet gives unit dimensions, quantities of brick needed for turning circles, constructing walls. Standard fire brick, cupola blocks, wedge, key arch and circle brick listed. Ironton Fire Brick Co, Ironton, Ohio.

H10 **SHOCK ABSORBERS** — Hydro-pneumatic accumulator absorbs shocks and vibrations of hydraulically operated tracked and rubber-tired equipment. 4-page bulletin 700 gives operating principles, installation diagram capacities. Greer Hydraulics, Inc, 454 18th St, Brooklyn 15, N. Y.

MAINTENANCE AND SAFETY EQUIPMENT

J1 **INSTANTANEOUS WATER HEATERS**—Heat up to 300 gpm with live or exhaust steam. No storage tank. Water flows through copper tubing, steam supplied to shell. 12-page catalog No. 60. Dimensions, capacities, steam requirements. Also other industrial fluid heating units. General Fittings Co. Dept 37, 118 Georgia Ave, Providence 5, R. I.

J2 **OILERS** — Threaded, wick feed, sight feed, constant level, multiple. Catalog No. 60 lists dimensions, capacities, applications. Full-size illustrations. 166 pages. Gits Bros Mfg Co, 1846-66 S Kilbourne Ave, Chicago 23, Ill.

J3 **WHEEL GUARDS**—For portable, flexible shaft, and bench grinders. 135- or 180-deg wheel exposure, with or without faceplates. 4-page bulletin. Morrison Products, Inc, 16816 Waterloo Rd, Cleveland 10, Ohio.

J4 **PIPE TOOLS**—Hand and power pipe and bolt machines, ratchet threaders, reamers, cutters, etc. 28-page catalog gives complete information, with photos and operating methods. Beaver Pipe Tools, Inc, Dana Ave, Warren, Ohio.

J5 **OILERS AND SUPPLY CANS**—10-page catalog 100 gives specifications, capacities of welded steel bench and pump oilers, torches, etc. Gem Mfg Corp, Dept SDP, 1229 Goebel St, Pittsburgh 33, Pa.

J6 **MASONRY DRILL BITS** — *Cyclo-twist, cyclo-core* and *thunderbolt* bits for soft, hard and very hard materials. 6-page folder gives prices, specifications, guide for choosing right bit. New England Carbide Tool Co, Inc, 60 Brookline St, Cambridge 39, Mass.

J7 **CUT-OFF WHEELS** — 8-page folder 6921 gives grade recommendations, performance data and operating suggestions for Manhattan cut-off wheels used on machines made by Stone Machy Co. Abrasive Wheel Dept, Manhattan Rubber Div, Raybestos-Manhattan, Inc, Passaic, N. J.

J8 **BLAST CLEANER** — Describes Vacu-Blaster, a tool for blast-cleaning metal, concrete, brick, stone or wood surfaces. Blast cleaner has a vacuum pick-up and reclaims and reuses abrasives, collects dirt and debris. 22-page bulletin No. 2189. Vacu-Blast Co, Inc, 350 Peninsular Ave, San Mateo, Calif.

J9 **MAINTENANCE TOOLS** — Covers a complete line of 4,000 tools such as socket wrench equipment, hand tools, punches, chisels, screwdrivers, pliers, tool boxes, etc, for servicing operations and maintenance work throughout industry. Complete specifications. 104-page catalog No. TR. Snap-on Tools Corp, Kenosha, Wis.

J10 **TURBINE OIL MAINTENANCE**—Illustrates and describes dry-type oil maintenance methods for the bearings of modern turbines. Importance of continuous oil maintenance and factors which cause turbine oil deterioration are explained by charts, diagrams and phantom views. 12-page bulletin No. 832-P. Bowser, Inc, Fort Wayne 2 Ind.

J11 **DIESEL ENGINE STAND**—4-page folder describes construction and use. Photos, specifications. R & G Mfg Co, 504 Wysor Bldg, Muncie, Ind.

J12 **WINDER-UPPER** — For meters, instruments, clocks. 4-page bulletin illustrates 3 types. J A Campbell Co, 645 E Wardlow Rd, Long Beach 7, Calif.

J13 **LATHE ACCESSORIES**—36-page catalog No. 5102 gives complete information on collets, spindles, tool blocks, face plates, twist drills, etc. South Bend Lathe Works, 425 E Madison St, South Bend 22, Ind.

J14 SULFUR FIRES—Technical bulletin describing extinguishing techniques. 1-page bulletin No. 22. Ansul Chemical Co, Marinette, Wis.

J15 LUBRICATION — Specialized lubricants that cover majority of plant requirements with minimum of types and densities. Characteristics, uses, specifications. 20-page bulletin No. BK-19. Keystone Lubricating Co, 21st, Clearfield and Lippincott St, Philadelphia 32, Pa.

J16 OIL FILTERS—Portable *Purivac* system restores used insulating and transformer oils to new specifications. Two 4-page folders give case histories, illustrate operation. Honan-Crane Corp, 200 Superior, Lebanon, Ind.

J17 METALLIC PACKINGS—Flexible "V" metal insert, metallic valve stem, all metallic, high temperature aluminum, braided copper, etc., packings. 8-page bulletin has photos, specifications, service recommendations. Raybestos - Manhattan, Inc, Packing Div, Manheim, Pa.

J18 POWER PLANT PACKINGS—6-page folder keyed to plant requirements. Photos, construction information, sizes, etc., for shaft, plunger, valve stem, piston and sheet packings, gaskets. Johns-Manville Corp, 22 E 50th St, New York 16, N. Y.

J19 PISTON RINGS — Plain compression, bronze band, oil, sealing, etc., rings. 20-page catalog has photos, uses, operating data, gives ordering instructions. Safety Seal Piston Ring Co, PO Box 106, Fort Worth, Tex.

J20 CONNECTOR SIZE CHART—Shows correct fitting to use for armored, leaded, flexible steel, nonmetallic sheathed, and service entrance cables. Thomas & Betts Co, Inc, 46 A Butler St, Elizabeth, N. J.

J21 WIRE ROPE ASSEMBLIES—Detail specifications on wire rope with fittings permanently attached. For operating controls, as parts of machinery and equipment, for slings and hoists. 24-page catalog 5201. Macwhyte Co, Kenosha, Wis.

J22 TUBE EXPANDERS—For power and hand use, 1 to 6-in. OD tubes. 4-page folder 204-C has photos, dimensions, prices. Gustav Wiedeke Co, Dayton 1, Ohio.

J23 TUBE BENDER—For ½ and ⅝-in. OD copper, aluminum, brass, etc thinwall tubing. Bends to any angle up to 180 deg. 2-page bulletin 3001 has photos, description. Imperial Brass Mfg Co, 1200 W Harrison St, Chicago 7, Ill.

J24 PIPE THREADERS — Also cutters, reamers, vises, thread-cutting oils, etc. 52-page catalog 49 has dimensions, photos, prices, descriptions of complete *Toledo* line. Toledo Pipe Threading Machine Co, 1425 Summit St, Toledo 4, Ohio.

J25 FIRE FIGHTING PRODUCTS—Portable equipment. 12-page catalog CP-7-50M-51 describes foam nozzles, liquids, hand lines, play pipes. Illustrated. Rockwood Sprinkler Co, 38 Harlow St, Worcester 5, Mass.

J26 LUBRICATING GREASES — Aluminum Stearates. 16-page catalog traces history, manufacture, structure, properties, performance. American Cyanamid Co, Industrial Chemicals Div, 30 Rockefeller Plaza, New York 20, N. Y.

J27 SAFETY TOOLS—Spark-resisting construction. Wrenches, chisels, screw-drivers, hammers, pliers, etc. 4-page bulletin ST-5 has sizes, construction details. Ampco Metal, Inc, 1745 S 38 St, Milwaukee 46, Wis.

J28 GRINDER-MILLER — Runs at controllable speeds from 15,000 to 45,000 rpm: ¼ hp motor; for precision, high-speed applications. May be set up in tool mounts or used as a portable hand-tool. 2-page bulletin form F1 has photo, dimensions, construction features. Precise Products Co, Racine 1, Wis.

J29 CIVIL DEFENSE EQUIPMENT—28-page catalog G-12 offers outline of action for civil defense services, presents and describes equipment for first aid, emergency lighting, head and eye protection, cable splicing, etc. Mine Safety Appliance Co. Braddock, Thomas and Meade Sts, Pittsburgh 8, Pa.

J30 AUTOMATIC OILER—Broadside aids in the selection of proper visible, automatic oiler for constant level, gravity, wick, underfeed, multiple and large capacity gravity feed applications. Installation photos show actual applications. Broadside Series 4900. Trico Fuse Mfg Co, 2948 N 5th St, Milwaukee 12, Wis.

J31 SCREW DRIVERS — Catalog-handbook of Vaco break-proof and shock-proof screw drivers. Also included are nut-driver kits, and other hand tools. 32-page catalog No. SD-551. Vaco Products Co, 317 E Ontario St, Chicago 11, Ill.

J32 STEP LADDERS—Features all-steel mobile ladders available in models with from one to eight steps, also new 4-step Stockart ladder with adjustable push bar hangers for use with stock carts. 6-page bulletin. Ballymore Co, Wayne, Pa.

J33 ACID CLEANING — Entire procedure of acid washing of boilers and other heat exchange equipment described. Contains technical data from research report on inhibitor used to protect boiler metal, and methods of control. Brochure. Sumco Engrg Inc, 144-146 Centre St, Brooklyn 31, N. Y.

J34 CLEANING SOLVENTS — Describes various solvents used in power house maintenance practice, together with the procedures of their use. Booklet. Sumco Products Inc, 144-146 Centre St, Brooklyn 31, N. Y.

J35 INDUSTRIAL CLEANER — Data on the Vibro pneumatic industrial cleaner applicable to many power plant and machine operations. Operates from any compressed air source and has no electric motor or rotating parts. 4-page bulletin. Patterson Products, 518 Maccabees Bldg, Detroit 2, Mich.

J36 DRUM CLEANERS — Rotoblast blast machines clean 70 and 140 drums per hr. Photos, drawings, dimensions. 6-page bulletin No. 220. Pangborn Corp, Hagerstown, Md.

J37 MINIATURE CATALOGS — Accordion-folded catalogs of machine tools and lathe accessories; 2½ by 1⅝ in., 28 pages each with illustrations. Catalog Nos. 5104 and 5119. South Bend Lathe Works, South Bend 22, Ind.

J38 HYDRAULIC VISE — 4-in jaw with 6-in. opening. Max jaw pressure 4000 lb, max hydraulic pressure 7000 psi. Foot pedal control. Specifications, parts list, diagrams, photos. Bulletins No. HV 7548-R and 6042 SPS. Columbian Vise and Mfg Co, 9021 Bessemer Ave, Cleveland 4, Ohio.

J39 PACKINGS — Asbestos fabric in ⅜ to 2 in. sizes. Types, service recommendations, sizes, std packages; 4-page bulletin. Raybestos-Manhattan, Inc, Packing Div, Manheim, Pa.

J40 MORTAR — *Embeco* Method for Setting Floor Brick. Description, photos, diagrams, applications for brick and heavy tile floors. 4-page bulletin. The Master Builders Co, 7016 Euclid Ave, Cleveland 3, Ohio.

J41 PAINTS—4-page technical folder with quick reference index of most suitable coatings for rust prevention, chemical corrosion, and dampness. The Wilbur & Williams Co, 130 Lincoln St, Brighton 35, Mass.

J42 PAINTS—Anti-rust in black and clear colors. Prices included. 1-page bulletin No. L-4284. Paint Corporation of America, Fidelity Bldg, Cleveland 14, Ohio.

J43 SEALING AND LUBRICATION COMPOUNDS—12 different compounds for thread sealing and valve lubrication, some specialized mixtures. Catalog No. 5400. Parker Appliance Co, 17325 Euclid Ave, Cleveland 12, Ohio.

J44 LUBRICANTS—Two folders listing types and uses of *Lubriplate*. Fiske Bros Refining Co, Lubriplate Div, Newark 5, N. J.

J45 WEATHERPROOF ASPHALT — *Laykold Fibrecoat* for bituminous roofs and metal. Specifications, application data, approximate costs and equipment for applying. 4-page bulletin. American Bitumuls & Asphalt Co, 200 Bush St, San Francisco 4, Calif.

J46 FIRE EXTINGUISHERS—Folder covers complete line of portable and special-purpose fire extinguishers. Chart provides guide for selecting the right extinguisher for every type of fire hazard in industry, institutions and the transportation field. Stop-Fire, Inc, 125 Ashland Place, Brooklyn, New York

To order catalogs, use cards on page 173

J47 CLEANING SERVICE—Describes how Dowell service provides an efficient means of cleaning steam generators, heat exchange equipment and water lines—and for increasing water well output. 6-page bulletin. Dowell Incorporated, Dept P, P O Box 536, Tulsa 3, Okla.

J48 RETAINING RINGS — Engineering specifications and data on a series of external type retaining rings applied radially without pliers. 8-page bulletin No. 7. Waldes Kohinoor, Inc, Truarc Catalog Service, 47-16 Austel Place, Long Island City 1, N. Y.

J49 OIL RECLAIMER—Data on Hilco oil reclaimers for diesel and gas engines. Performs continuously or intermittently direct-connected to the engine, or as a batch reclaimer. 4-page bulletin No. R-238. Hilliard Corp, 102 W 4th St, Elmira, N. Y.

J50 PIPE TOOLS — An operating guide to help users secure the best possible results from portable pipe and bolt machines and hand pipe tools. Thirty-one different operations are covered. Beaver Pipe Tools, Inc, 334 Dana Ave, Warren, Ohio.

J51 THREAD INSERTS—Covers design data on helical-wire thread inserts and the use of these inserts in the protection and repair of tapped holes. 16-page bulletin No. 650-R. Heli-Coil Corp, 47-23 35th St, Long Island City 1, N. Y.

J52 TRAMP IRON REMOVAL — Describes non-electric permanent magnetic separators for tramp iron removal. Includes engineering data, selection information, factory engineering service available, etc. 16-page catalog No. 15. Eriez Mfg Co, Erie, Pa.

J53 CYLINDERS — For control and heavy moving operations. 4-page bulletin 152 gives applications in several fields. Ledeen Mfg Co, 1600 S San Pedro St, Los Angeles 15, Calif.

J54 OIL AND GREASE SEALS—For bearings. 100-page catalog 10 illustrates all types of *Klozures*, gives typical applications and complete list of sizes and part nos. Garlock Packing Co, Palmyra, N. Y.

J55 STANDARD TAPS — Designed specifically for the material they will be used on: steel and other tough materials; cast iron; light metals; die cast metals; brass; plastics. 36-page booklet gives comprehensive catalog listing. Detroit Tap and Tool Co, 415 Blvd Bldg, Detroit 2, Mich.

J56 ELECTRONIC CONTOUR FOLLOWER—For machining irregularly shaped parts. 1-, 2-, and 3-dimension tracer control systems. 4-page bulletin GEA-5660 has photos, diagrams. General Electric Co, Schenectady 5, N. Y.

J57 METAL FORMING MACHINE—Bends, folds, shapes and duplicates intricate or simple metal components. 6-page catalog No. 15 gives specifications, capacity, standard attachments. Kilham Engineering Inc, 1412 Packard Bldg, Philadelphia 2, Pa.

J58 HARDFACING RODS — Selection guide chart gives recommended type, size, method of application; description of *Amsco* rods. 4-page folder SG. American Manganese Steel Div, American Brake Shoe Co, Chicago Heights, Ill.

J59 SMALL ENGINE MAINTENANCE —Cartoon presentation of maintenance facts for small Caterpillar diesel, marine and electric equipment. Cooling, lubricating, air intake, exhaust and fuel systems. 28-page booklet 30246. Caterpillar Tractor Co, Peoria, Ill.

J60 SERVICE TOOLS—For caterpillar tractors. Hand and hydraulically operated tools, with attachments and accessories, for use with *OTC power-twin* hydraulic puller. 16-page bulletin CT-52. Owatonna Tool Co, N 378 Cedar St, Owatonna, Minn.

J61 TUBE EXPANDERS—Rolling and flaring type for superheaters and water tube boilers. 8-page bulletin No. 68. Adjustable type for tubes in heat transfer units, 4-page Bulletin No. 71. Specifications, ordering guides, photos, prices. Gustav Wiedeke Co, Dayton 1, Ohio.

J62 VAPOR COLLECTORS — Extract vapor from air around wet machining operations, return cleaned air to working space. Bulletin 622 gives illustrations, performance ratings, dimensions, motor size, list prices. Aget-Detroit Co, Ann Arbor, Mich.

J63 INDUCTION HEATING — Case histories on use of induction heating to increase production, reduce space, cut costs. 12-page booklet B-4782. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

J64 ELECTRONIC STETHOSCOPE —For locating and diagnosing mechanical troubles. *Elec-Detco* is portable noise detector. 4-page brochure gives use, specifications. Anco Instrument Div, American Name Plate & Mfg Co, 4254 W Arthington St, Chicago 24, Ill.

MAINTENANCE MATERIALS

K1 RUBBER SHEET PACKINGS—8-page bulletin gives description, specifications, service recommendations, for gum, neoprene, red-rubber, oil-resistant packings. Raybestos-Manhattan, Inc, Packing Div, Manheim, Pa.

K2 CONCRETE REPAIR — Ready-mixed *Flinthard* is resistant to oil, grease, acids, moisture. 2-page bulletin No. L-4581. Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio.

★ **REFRACTORY COATING** — *Cera-Kote* protects against slag penetration, abrasive wear, flame erosion, thermal shock. 4-page bulletin. ★Write direct on company letterhead to Williston & Co, Delta, Ohio.

K3 SURFACE PROTECTION — Coatings expand and contract like the materials they protect. 12-page bulletin gives data on development and application of *White-Hot* and *Pyro-Chrome* coatings. Preferred Utilities Mfg Corp, 1860 Broadway, New York 23, N. Y.

K4 PAINT ANCHORING—Corrosion-resistant phosphate treatment for metals. 8-page booklet gives common causes of paint failure and how they can be prevented. *Anchorite* 100 process is discussed. Octagon Process, Inc, 15 Bank St, Staten Island 1, N. Y.

K5 DUCK AND RUBBER PACKINGS —Gives service recommendations for various types of duck and rubber packings, lists the standard sizes in which each is available and gives packaging specifications on all types. 8-page bulletin. Raybestos - Manhattan, Inc, Packing Div, Manheim, Pa.

K6 SERVICE FLOORING — Information on how and where to apply Plastic Rock flooring as well as technical data about the product itself. The use of Plastic Rock for resurfacing heavy traffic areas is highlighted. 8-page brochure No. 200. United Laboratories, Inc, 16801 Euclid Ave, Cleveland 12, Ohio.

K7 LIQUID WATER REPELLENT— Product information and application bulletin on H-2-O-NO, silicone base liquid water repellent for masonry. Instructions for using it, technical data, coverage facts, etc, are included. Chem-Industrial Co, 1114 Hippodrome Bldg, Cleveland 14, Ohio.

K8 INDUSTRIAL FLOORS—Booklet, "Why Engineer An Industrial Floor" describes how the Flash-Stone system engineers floors to withstand moving and deadweight loads, shocks and vibration, extremes of temperature and other destructive agents. 12 pages. Flash-Stone Co, Inc, Philadelphia 44, Pa.

K9 FLOOR MAINTENANCE—Graphically illustrated pocket-sized booklet, "Over The Rough Spots" tells where to look for and how to correct bad floor conditions. How to protect concrete and wood flooring and maintain proper repair also discussed. 32 pages. Stonhard Co, 1306 Spring Garden St, Philadelphia, Pa.

K10 PACKINGS AND GASKETS — Illustrates and describes 95 packings and gaskets. Furnishes construction details, service recommendations and size information on each item. Recommendation charts for wide variety of applications also given. 32-page catalog No. P-100C. Raybestos-Manhattan Inc, Packing Div, Manheim, Pa.

K11 PLASTIC PACKINGS — Features "versi-pak" non-jacketed plastic packing, a dense, relatively inert packing with high compressibility that provides positive sealing at high pressures while maintaining low pressure on the packing gland. Service recommendations included. 4-page bulletin. Raybestos-Manhattan Inc, Packing Div, Manheim, Pa.

K12 ALUMINUM PAINT — Lists and explains the six main advantages of Prufcoat aluminum paint, a ready-mixed, all purpose paint for use inside or outside. 1-page bulletin No. 025. Prufcoat Laboratories, Inc, 63 Main St, Cambridge, Mass.

K13 PACKING RINGS — Features 5 types of Vee-Flex packing rings for use in valves, pumps, hydraulic cylinders, arms, presses, and lifts against a long list of services and pressures. 4-page bulletin. Raybestos-Manhattan, Inc, Packing Div, Manheim, Pa.

K14 ELECTRICAL TAPE — Discusses how electrical tape No. 22 combats the corrosive action of moisture, alkalies, oils, fats, and fungi on underground gas service pipes. 4-page brochure. Minnesota Mining & Mfg Co, 900 Fauquier St, St. Paul 6, Minn.

K15 HOSE CLAMPS AND FITTINGS —Illustrates and describes the Punch-Lok clamping method and its applications. Lists the standard clamps, locking tools, and special fittings available. 12-page catalog No. 300. Punch-Lok Co, 321 N Justine St, Chicago 7, Ill.

K16 BOILER PROTECTION—How to save fuel tanks, boilers and piping in hot water and steam systems with the Model E-Z Butler de-scaler. 4-page bulletin. Butler Engrg. Co, 2612 Rousseau St, New Orleans 13, La.

K17 DIESEL ENGINE PROTECTION —Data on the functioning of Butler diesel de-scalers in railroad and marine diesel or gas engines and in combination steam-diesel power plants. 6-page bulletin. Butler Engrg Co, 2612 Rousseau St, New Orleans 13, La.

K18 HAMMER BIT—Shows and tells users how Thunderbolt carbide tipped hammer bits perform when drilling holes, under a variety of conditions, in hard concrete or granite. Specifications and prices included. 8-page folder. New England Carbide Tool Co, Inc, 60 Brookline St, Cambridge 39, Mass.

K19 HEAT - RESISTANT PAINTS — Gives application and product data for the five Speco heat-resistant paints. 1-page bulletin. Speco, Inc, 7308 Associate Ave, Cleveland 9, Ohio.

K20 FIBRE AND SHEET PACKINGS —Features complete line of asbestos and fibre sheet packings, with descriptions of each type packing, together with full service recommendations, standard sheet sizes, weights and thicknesses. 8-page bulletin. Raybestos-Manhattan, Inc, Packing Div, Manheim, Pa.

K21 WOOD PRESERVATIVE — Contains 60 specifications and an abstract of each, for the use of pentachlorophenol wood preservative issued by state, federal and armed forces agencies. 17-page bulletin. Monsanto Chemical Co, St Louis 4, Mo.

K22 PLIER REPAIR — How to get worn and damaged pliers back into useful shape is the subject of new booklet, "First Aid for Pliers." Utica Drop Forge & Tool Corp, Utica 4, N. Y.

K23 CHEMICAL CLEANING — Describes chemical cleaning and descaling of industrial heat exchange equipment, the Solvent Service way. They specialize in service for steel mills, chemical process industries, industrial power plants, utilities, marine industry and water wells. 4-page bulletin. Solvent Service, Inc, Painesville, Ohio.

K24 SCALE REMOVAL — Tells how Oakite Compound No. 32, an inhibited material, dissolves scale and rust deposits in heat exchange equipment. 28-page booklet. Oakite Products, Inc, 22 Rector St, New York 6, N. Y.

K25 DAYLIGHT CONTROL — Prismatic glass blocks produce better daylight lighting. 24-page booklet *Daylight for Industry* shows principles of good lighting, use of glass block in factory and office. Ray Smolik, Sales Promotion Dept, American Structural Products Co, Ohio Bldg, Toledo, Ohio.

K26 LUBRICANT — Moly-sulfide is stable from —40 to + 700 F, works effectively where other lubricants have failed. 40-page booklet gives 69 shop and 85 field applications. Climax Molybdenum Co, 500 Fifth Ave, New York 36, N. Y.

K27 POROUS CHROMIUM — For lining engine cylinders. 12-page booklet shows applications, *Porus-Krome* method of electrodepositing. 10-page reprint from *ASME Transactions* discusses properties. Van der Horst Corp of America, Olean, N. Y.

K28 METALLIC COMPOUND—Can be used to prevent corrosion, or as a sealant, lubricant, or gasket. 8-page folder No 5 gives specifications, uses. 20-page condensed report from Underwriters' Laboratories gives tests and results. James K. Harbinson & Co, Inc, 70 W Chippewa St, Buffalo 2, N. Y.

K29 FLEXIBLE TUBE CABLE — For air and hydraulic circuits. *Armortube* contains 4, 8, or 12 tubes in flexible metallic covering. 4-page bulletin BA-927 gives specifications, advantages. Bailey Meter Co, 1050 Ivanhoe Rd, Cleveland 10, Ohio.

K30 COLD SETTING CEMENT—*Nerva-Plast* is anti-corrosion waterproof coating for insulation, roofs decks, walls, etc. Bulletin 403 and technical data sheet give properties and uses. Rubber & Plastics Compound Co, Inc, 30 Rockefeller Plaza, New York 20, N. Y.

K31 PLANT MAINTENANCE — *Oakite Plant Maintenance Digest* recom-

mends specific materials and methods for 54 cleaning and related tasks in factories. 16-page bulletin with index. Oakite Products, Inc, 22 Rector St, New York 6, N. Y.

K32 **ROOF COATING** — Asbestos-aluminum coating provides insulating seal, prolongs roof life. 2-page bulletin L-4925 gives features, describes other aluminum paints for other applications. Paramount Industrial Products Co, University Center Station, Cleveland 6, Ohio.

K33 **PROTECTIVE COATINGS** — For controlling corrosion on industrial floors, walls, ceilings, etc. 2-page technical bulletin 501 shows chemical resistances in chart form. G Russell Hersam, Gen Sales Mgr, Prufcoat Laboratories, Inc, 50 E 42nd St, New York 17, N. Y.

K34 **MASONRY PROTECTION**—Coating for concrete, stucco, concrete block, etc. *Dum-dum masonoc* prevents moisture seepage, checks cracks. 20-page bulletin gives applications, photos. Arco Co, 7301 Bessemer Ave, Cleveland 27, Ohio.

K35 **PACKING**—Sheet and ring types. Two 4-page bulletins give specifications, service recommendations. *Walkerite* sheet packing for use up to 1000 psi, 1000 F; *Shallex* packing for shallow stuffing boxes comes in sets of V-shaped rings with male and female adapters, any size from 3/16 in. up. James Walker Packing Co, Inc, 96 Liberty St, New York 6, N. Y.

MATERIALS HANDLING

L1 **INDUSTRIAL LEATHERS** — Flat and rounded belting, *Tannate* leather packings for hydraulic and pneumatic equipment. File folder contains 11 data sheets with specifications, uses. J E Rhoads & Sons, 35 N 6th St, Philadelphia 6, Pa.

L2 **BELT CONVEYOR** — *Table-veyor* for assembly, inspection, checking, etc. 4-page bulletin TV-52 gives uses, specifications, description. Rapids-Standard Co, Inc, Dept TV, 342 Rapistan Bldg, Grand Rapids 2, Mich.

L3 **CRUSHERS**—Ring and roll types, for reducing coal, coke, lime, glass cullet, etc. 16-page bulletin 12-C gives capacities, power requirements, dimensions, photos, special applications, Stephens-Adamson Mfg Co, Aurora, Ill.

L4 **GRAB BUCKETS** — Three grab bucket bulletins available. Type RD designed to work on ends of operating lines of man trolley ore, and coal bridge and tower installations—bulletin No. RD-1. Type C "bight of line" for fleet-through operation on rope system bridges and towers—bulletin No. C-1. Type R for steeple type towers —bulletin No. R-1. 6 pages each. Mead-Morrison Div, McKiernan-Terry Corp, Dept 2, Harrison, N. J.

L5 **CHAIN DRIVES AND CONVEYORS** — Bulletin, "Installation, Operation, and Maintenance of Chain Drives and Conveyors," shows how to get the most service from your sprocket chains. 32-page bulletin No. 51-7. Chain Belt Co, 1600 W Bruce St, Dept PR, Milwaukee 4, Wis.

L6 **EXCAVATORS**—Lists condensed specifications and types of service to which excavators can be converted for such use as shovel, dragline, backhoe, crane, etc, and also gives crane lifting capacities. 32-page bulletin No. 403. Marion Power Shovel Co, Marion, Ohio.

L7 **MATERIALS HANDLING ANALYSIS**—16-page pocket-size guide book presents 28 questions to determine basic material-handling requirements for factories, warehouses. Automatic Transportation Co, 149 W 87th St, Chicago 20, Ill.

L8 **FORK TRUCK ATTACHMENTS**—4-page folder illustrates 25 special truck attachments. Revolving forks, electro magnet, upender, scoop, fork extensions, etc. Elwell-Parker Electric Co, 4205 St Clair Ave, Cleveland 3, Ohio.

L9 **CONVEYOR AND ELEVATOR BELTING**—32-page catalog NY-1697-C gives specifications, construction, uses, capacity, installation information. Charts, photos, formulas. F E Tilley, New York Belting and Packing Co, 1230 Avenue of the Americas, New York 20.

L10 **OSCILLATING CONVEYORS**—For feeding, cooling, screening bulk materials. 24-page booklet 2444 illustrates torsion-mount units for heavy duty, flex-mount units for lighter duty. Dimensions, weights, capacity, hp charts, photos. Trough widths 8 to 48 in. Link-Belt Co, 307 N Michigan Ave, Chicago 1, Ill.

L11 **VIBRATORS**—Air-cushioned unit eliminates noise. 4-page bulletin gives construction features, dimensions, photos. Cleveland Vibrator Co, 2828 Clinton Ave, Cleveland 13, Ohio.

L12 **COAL - AND ASH - HANDLING EQUIPMENT**—For power plants. 44-page book No. 2410 has layout drawings, photos of large and small installations. Link-Belt Co, 307 N Michigan Ave, Chicago 1, Ill.

L13 **ASH HANDLING** — Pneumatic systems. 4-page folder shows installation photos. Allen-Sherman-Hoff Co, 259 E Lancaster Ave, Wynnewood, Pa.

L14 **BELT CONVEYOR CARRIERS**—18-page bulletin No. 2-C gives complete catalog information. Light- and heavy-duty carriers, belt-training units, guide rollers. Stephens-Adamson Mfg Co, Aurora, Ill.

L15 **ELECTRIC TRUCKS** — Motorized hand trucks and electric stackers, *Workaseer* line. 16-page bulletin No. PS09 shows construction, attachments, capacities. Yale & Towne Mfg Co, 11000 Roosevelt Blvd, Philadelphia 15, Pa.

L16 **CONVEYOR BELT** — Heavy-duty *Ray-Man F* type. For use where there is danger of tearing or puncture, where more flexibility or thick narrow belts are required. Bulletin 6915. Raybestos-Manhattan, Inc, Manhattan Rubber Div, Passaic, N. J.

L17 **BELT FEEDER** — Continuously weighs and feeds dry materials. Capacity 100 to 100,000 lbs per hr. 4-page bulletin 35-F5B gives dimensions, features, operation. Omega Machine Co, 345 Harris Ave, Providence 1, R.I.

L18 **INDUSTRIAL TRUCKS** — 4-page condensed catalog illustrates and describes complete line of battery powered industrial trucks. 1000 to 110,000 lb capacities. Automatic Transportation Co, 149 W 87th St, Chicago 20, Ill.

★ **FORK-LIFT TRUCKS** — 32-page booklet No. SP-10. *What Makes it Tick?* gives basic product information on Towmotor construction features, handling methods. Based on 15-min. sound-slide film. Booklet distributed after showing of film. ★ Request direct, not from POWER. Towmotor Corp, Cleveland 10, Ohio.

L19 **ELECTRIC TRUCKS** — 12-page bulletin P5151 describes complete line of electric trucks in capacities from 1000 to 100,000 lbs. Types, features, application, selection. Yale & Towne Mfg Co, 11,000 Roosevelt Blvd, Philadelphia 15, Pa.

L20 **COST-CUTTING METHOD** — Types of handling tools, plan for analyzing handling methods with charts and summary sheets. 24-page bulletin No. P-902 Rev. Yale & Towne Mfg Co, 11,000 Roosevelt Blvd, Philadelphia 15, Pa.

L21 **TRUCK CATALOG**—Specifications and illustrations for hand and trailer trucks, baggage wagons, platform skids, dollies, lift jack systems, etc. 12-page catalog No 508-B. The Howe Scale Co, Rutland, Vt.

★ **ELECTRIC STAIRWAYS** — Buyer's guide. Cut-away view, discussion of parts, available sizes, price data, layouts. 32-page booklet B-4582. ★Write direct, not to POWER, on company letterhead. E B Dawson, Dept T, Elevator Div, Westinghouse Electric Corp, Jersey City, N. J.

L22 **HOSPITAL ELEVATOR** — Discussion of problems and solutions with different types and arrangements of elevators and dumb-waiters 20-page bulletin. Otis Elevator Co, 260 Eleventh Ave, New York 1, N. Y.

L23 **CONVEYOR IDLERS AND MACHINERY** — Information on the latest designs and developments of Rex Belt conveyor idlers and machinery. Included are sections devoted to engineering data, lubrication material and techniques, and correct maintenance procedure. 42-page bulletin No. 51-81. Chain Belt Co, Dept PR, 1600 W Bruce St, Milwaukee 4, Wis.

L24 **LIFT TRUCK** — Operating data, dimensions, specifications on pneumatic tire models FPB20-24 and FPB20-15 fork trucks in capacities from 2000 lbs to 6000 lbs at 15 and 24 in. load centers. 4-page bulletin No. 1550. Buda Co, Harvey, Ill.

L25 **FEEDERS AND CONVEYORS**—Describes a line of Jeffrey-Traylor electric vibrating feeders and conveyors. Instantaneous and absolute control over flow of material is electrical and may be made manual or completely automatic. Specifications, typical installatinos and applications given. 86-page catalog No. 830. Jeffrey Mfg. Co, Columbus 16, Ohio.

L26 **COAL AND MATERIALS HANDLING EQUIPMENT**—Presents a complete line of flight and belt type portable conveyors and under car unloaders for handling coal, coke, sand, gravel and other bulk materials. Specifications given on electric and gasoline powered models as well as hand-move and self-propelled conveyors. 12-page bulletin No. 512. Lake Shore Engrg Co, Iron Mountain, Mich.

L27 **CONVEYOR BELT ACCESSORIES** —Describes a spring-type multiple-blade belt cleaner which removes wet or dry particles from conveyor belts; and a roller type, instant acting holdback for preventing accidental reversal of inclined conveyors and elevators. 4-page bulletin No. 651. Stephens-Adamson Mfg. Co, Aurora, Ill.

L28 **VIBRATING SCREENS** — Describes Model UP vibrating screens for the dry-screening of light and fine materials, and Model NRM liquid vibrating screens for high speed separation of solids from liquids. 20-page booklet No. 2377. Link-Belt Co, 307 N Michigan Ave, Chicago 1, Ill.

L29 **MAGNETIC SEPARATORS**—Pulley, perma-plate, suspended, drum, rectangular, lifting types. All sizes and applications. 12-page condensed catalog No. C-5000-B. Photos; lists catalogs with details. Dings Magnetic Separator Co, 4740 W Electric Ave, Milwaukee 46, Wis.

L30 **WIRE ROPE** — Reprint article. Examples of misuses and damage to wire rope, methods of proper use, maintenance, handling and lubrication. 4 pages. *Ropeology — Wire Rope — So What?* No. 5134. MacWhyte Co, Kenosha, Wis.

L31 **CHAIN DRIVES AND CONVEYORS**—Discusses correct and incorrect ways of solving chain and conveyor installation, operation and maintenance problems. Bulletin No. 51-7. Chain Belt Co, 1600 W Bruce St, Dept PR, Milwaukee 4, Wis.

L32 **CONVEYOR BELTS** — Handbook on spiral woven wire conveyor belts and complete conveyor systems. Illustrated are standard and special types of wire belting weaves with specifications and detailed descriptions. 40-page catalog No. 31. Korb-Petit Wire Fabrics & Iron Works Inc, 1505-15 N Mascher St, Philadelphia 22, Pa.

L33 **COAL HANDLING**—Gives forty-two illustrations of Cummins diesels at work in U. S. coal fields in various applications such as stripping

and loading, hauling, stationary power and transporting. 8-page bulletin No. 5317. Cummins Engine Co, Inc, Columbus, Ind.

L34 TROLLEY HOISTS—Gives specifications of ½- to 3-ton trolley hoists along with dimensions and construction details. 2-page leaflet No. DH269. Wright Hoist Div, American Chain & Cable Co, York, Pa.

MECHANICAL TRANSMISSION

M1 MAGNETIC DRIVE — Discusses precision speed control with the adjustable-speed magnetic drive and new magnetic amplifier Regutron speed control. Charts, diagrams, and illustrations included. 32-page booklet No. 1107. Electric Machinery Mfg Co, Minneapolis 13, Minn.

M2 PILLOW BLOCKS—Pointers on the construction, application and installation of pillow blocks ranging in sizes to take shafts 1 15/16" to 9" in. diameter. Includes engineering data, bearing capacities, lubrication information, dimension drawings, types and sizes. Catalog No. 88. W A Jones Foundry & Machine Co, 4401 W Roosevelt Road, Chicago 24, Ill.

M3 SPEED CHANGER — Type 4B miniature variable-ratio speed changer with lever adjustment described. Advantageous in applications requiring remote or automatic control. 1-page data sheet No. 4B. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

M4 POWER TRANSMISSION DRIVES —Information on Hy-Vo power transmission drives including operating principles, highlights of new design principles, capacities, speed ranges, service factors for selecting drives, installation and lubrication procedures. Catalog No. C 72-51. Morse Chain Co, 7601 Central Ave, Detroit 8, Mich.

M5 ROLLER BEARINGS — Illustrates and describes full line of Shafer self-aligning roller bearings, and pillow blocks, flange units, flange cartridge units, cartridge units, duplex units, etc. 56-page catalog No. 51. Shafer Bearing Corp, 801 Burlington Ave, Downers Grove, Ill.

M6 BELT CONTACT WHEEL—Data on the company's new "61" specially serrated rubber contact wheel for abrasive belt backstand applications. 4-page bulletin. Carborundum Co, P O Box 337, Niagara Falls, N. Y.

For copies of catalogs use cards, page 173

M7 SPEED REDUCERS—Gives data relating to the single-reduction series of the Dodge Torque-Arm speed reducers. Output speeds from 115 to 330 rpm—capacities to 27 hp. 12-page bulletin No. A-602. Dodge Mfg Corp, Mishawaka, Ind.

M8 FLEXIBLE SHAFTING—64-page book describes advantages and applications; also shows end fittings, casings, adapters and shaft combinations. Over 400 illustrations. F W Stewart Mfg Corp, 4311 Ravenswood Ave, Chicago 13, Ill.

M9 V-BELTS — Single-groove type, with straight sidewalls and straight-in-line cords. Miniature bulletin 6830-B has photos, construction features, standard sizes and belt nos. Raybestos-Manhattan, Inc, Manhattan Rubber Div, Passaic, N. J.

M10 VARIABLE SPEED DRIVES — Miniature combination fixed and variable speed units for low power applications. 2-page technical data sheet M1 has dimensions, applications, ordering instructions. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

M11 GEARS—4-page bulletin illustrates line of gears and speed reducers, notes catalogs with complete information. Philadelphia Gear Works, Inc, Erie Ave and G St, Philadelphia 34, Pa.

M12 ROLLER CHAINS—Double pitch. Drive and conveyor types. 12-page bulletin No. 51-2 gives details on all types and standard attachments. Charts, photos, diagrams, tables. Chain Belt Co, 1600 W Bruce St, Dept PR, Milwaukee 4, Wis.

M13 V-BELTS — Precision balanced, *Condor* line. 4-page folder No. 6868-E gives construction features, installation photos, table of standard sizes and list prices. Raybestos-Manhattan, Inc, Manhattan Rubber Div, Passaic, N. J.

M14 HYDRAULIC CYLINDERS — Standard and cushioned types, for pressures of 1500 psi max, special cylinders to 3000 psi. Keeper-ring construction. Catalog No. 105 gives complete information, working drawings, specifications on 108 different models. Rivett Lathe & Grinder, Inc, Brighton 35, Boston, Mass.

M15 WORM GEAR SPEED REDUCERS — Descriptive of several worm gear speed reducer units such as the Type CU unit for cooling tower service, the Speedaire fan-cooled reducer used where space is at a premium, and other units designed for specific applications involving unusual problems. 8-page bulletin. Cleveland Worm & Gear Co, 3249-59 E 18th St, Cleveland 4, Ohio.

M16 ROLLER CHAINS — Offers a quick means of determining interchangeability of various makes of roller and conveyor chains. Also of value in determining proper application of chain drives as a power transmission or conveying medium. Catalog No. HD-51. Whitney Chain Co, 237 Whitney St, Hartford 2, Conn.

M17 ROLLER CHAINS AND SPROCKETS—Gives details on list prices, available sizes of types A, B, and C Morse stock sprockets, and stock roller chain from ¾ to 2 in. pitch. Also includes data on drive selection, service factors, installation and service. Catalog No. C 55-50. Morse Chain Co, 7601 Central Ave, Detroit 8, Mich.

M18 SPEED REDUCERS—Gear motors. How to select; hp ratings, ratios, installation graphs, replacement parts. 96 pages; pocket-sized catalog. Abart Gear and Machine Co, 4834 W 16th St, Chicago 50, Ill.

M19 LIGNUM-VITAE—For bearings, bushings, pulleys, rollers—substitutes for metals and plastics. Uses, properties, availability. 4 reprint articles, 4-page bulletin, 12-page pamphlet. Lignum-Vitae Products Corp, 91-97 Boyd Ave, Jersey City, N. J.

METALS AND ALLOYS

N1 METAL AND ALLOY IDENTIFICATION—Rapid spot-tested method for identifying common materials. 48-page booklet gives qualitative test procedures, directions for preparing reagents, chemical compositions of common metals and alloys. International Nickel Co, Inc, Development and Research Div, New York 5, N. Y.

N2 NICKEL ALLOY STEEL CASTINGS — Applications, typical compositions and properties, advantages, recommended specifications. 32-page bulletin. International Nickel Co, Inc, Dept EZ, New York 5, N.Y.

N3 BRAZE-CLAD METALS—Metal strip clad with silver brazing alloy. Simplifies silver brazing. 4-page bulletin BC-51 gives applications, explains how braze-clad metals work. American Silver Co, Inc, 36-07 Prince St, Flushing 54, N.Y.

N4 LEAD-CALCIUM FOR STORAGE BATTERIES—4-page reprint of article gives laboratory test data, reports on experiments leading to development of lead-calcium for battery-plate grids. Gould-National Batteries, Inc, Trenton 7, N.J.

N5 STAMPINGS—Methods of production and plant facilities described. Information to assist purchasers in preparing specifications 12-page booklet. Stampings Div, Laminated Shim Co, 85 Union St, Glenbrook, Conn.

N6 CORROSION-RESISTANT ALLOYS — Physical and chemical properties, corrosion-erosion-resistance and cavitation-pitting data. Working characteristics. Applications include centrifugal pumps, plug valves, pipe tube, fittings. Charts, photos. 20-page bulletin No. PI-3. Ampco Metal, Inc, 1745 S 38th St, Milwaukee 46, Wis.

N7 STANDARD STEEL BARS — 11x16½ in. wall chart give machining data on 275 grades of standard, special and alloy steels. Arranged according to AISI Nos. LaSalle Steel Co, Chicago 80, Ill.

N8 BRASS AND COPPER ALLOY—4-page folder lists 65 commonly used copper-base alloys, with their composition, properties, forms and typical uses. Bridgeport Brass Co, 3 Grand St, Bridgeport 2, Conn.

N9 CASTINGS — Light and medium; gray, alloyed, and Mechanite irons; Ni-Resist. 48-page booklet illustrates types of castings, finishes, uses. Hamilton Foundry and Machine Co, 1551 Lincoln Ave, Hamilton, Ohio.

N10 COPPER—History of Paul Revere, founder of U. S. copper industry. Development and present products of Revere Copper and Brass. 48-page booklet. Revere Copper and Brass Inc, 230 Park Ave, New York 17, N. Y.

N11 NICKEL CAST IRONS—Presents many valuable characteristics of modern nickel cast irons and illustrates their broad acceptance throughout industry. 27 charts, tables, and photomicrographs show how through the use of nickel the engineering properties of cast iron can be controlled to meet almost any combination of service requirements. 28-page bulletin. International Nickel Co, Inc, 67 Wall St, New York 5, N. Y.

N12 STAINLESS STEELS — Presents 40 different types of Allegheny metal stainless steel and covers each type from standpoint of analyses, fabrication, heat treatment and special conditions of service. A few of the subjects include: selection of proper type of stainless; presentation of each type of stainless separately; heat resistant properties and low temperature properties of metals. 120-page cloth-bound handbook. Allegheny Ludlum Steel Corp, 2020 Oliver Bldg, Pittsburgh 22, Pa.

N13 NICKEL-ALLOY CAST IRONS *Nihesist* metals withstand corrosion, heat, wear, and low temperature. 36-page bulletin gives applications, service data, properties, corrosion data on nearly 400 conditions. Photos, charts. International Nickel Co, Inc, Dept EZ, New York 5, N. Y.

METERS, INSTRUMENTS, ELECTRIC

R1 HIGH SPEED RECORDER—Describes a high speed Electronik recorder which features a one-second pen speed specially designed to measure the rapid change variables encountered in many laboratory and test applications. 2-page data Sheet No. 10.0-7. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

R2 DC DYNAMOMETERS—Gives informative data on Type TLC (cradled), 250-volt dc dynamometers for direct connection testing of internal combustion engines, electric motors, pumps, blowers, and compressors. Features, applications and operation given.

4-page bulletin No. GEA-5552, General Electric Co, Apparatus News Bureau, Schenectady 5, N. Y.

R3 **THERMOCOUPLE CODES**—Chart shows the applications, calibration symbols, conductors, polarity and color codes of thermocouple and extension wires. Resistance tables for these wires are shown on reverse side. Thermo Electric Co, Inc, Fair Lawn, N. J.

R4 **VOLTMETER AND AMMETERS** —Describes features of Series 500 recording voltmeters and ammeters with special emphasis on the newly developed moving-iron measuring mechanism. Gives information on ranges, uses and specifications of models for permanent and portable use. 28-page bulletin. Bristol Co, Waterbury 20, Conn.

R5 **ELECTRONIC RECORDER**—Frequency recorder for electrical power production. Photos, specifications, circuit diagram. 110-125 v, 60 cycles. 2-page data sheet No 9.1-8. Minneapolis-Honeywell Regulator Co, Station 40, Wayne and Windrim Aves, Philadelphia 44, Pa.

R6 **CURRENT TEST UNIT**—Supplies any current from 0 to 500 amp. For testing and calibrating overload relays, circuit breakers, transformers, instruments, relays. Photos, specifications. 2-page bulletin No. C-1003-351. Multi-Amp Corp, 121 Cross St, Harrison, N. J.

R7 **RECORDING OSCILLOGRAPH**—Measures strain, vibration, pressure, acceleration. Photographically records up to 18 separate static or high-frequency phenomena at same time, plus timing lines. 16-page bulletin No. CEC-1500B. Photos, diagrams, specifications. Consolidated Engineering Corp, 300 N Sierra Madre Villa, Pasadena 8, Calif.

R8 **POTENTIOMETER CONTROLLER**—Gives engineering specifications of the new Brown ElectroniK strip chart pneumatic control potentiometer. 2-page specification sheet No. 175. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

R9 **STRIP CHART RECORDER**—Describes the Brown ElectroniK strip chart recorder. Installation, system benefits, other data included. 4-page data sheet No. 9.1-7. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

R10 **PROCESS RECORDER**—Operation and construction features of a duplex ElectroniK recorder which simultaneously plots two totally independent variables on one chart. 2-page data sheet No. 10.0-6. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

R11 **PORTABLE PYROMETERS** — Features two portable pyrometer models for quick and accurate spot checking on industrial heating equipment. Specifications on thermocouple holders and tips also included. 2-page bulletin No. PPY-1 with separate price list. Wheelco Instruments Co, 847 W Harrison St, Chicago 7, Ill.

R12 **FUNCTION PLOTTER** — Gives operation and instrument characteristics and other technical information on the new ElectroniK function plotter which automatically plots one variable in terms of another. 4-page data sheet No. 10.0-5. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne & Windrim Aves, Philadelphia 44, Pa.

R13 **SPLIT-CORE METER** — Describes a hook-on power-factor meter that permits direct measurement without cutting conductors or interrupting electrical service. Selection chart included. 16-page bulletin No. GEA-5469. General Electric Co, Schenectady 5, N. Y.

R14 **RECORDING INSTRUMENTS** — Covers a new line of recording voltmeters and ammeters known as the Series 500 electric recorders. Information on models, ranges, specifications and uses included. 28-page bulletin No. E1111. Bristol Co, Waterbury 20, Conn.

R15 **SMOKE DETECTOR** — For air conditioning systems. 2-page bulletin AC-2 describes uses, operation. Ess Instrument Co, Bergenfield, N. J.

R16 **SMOKE RECORDER**—Ess *Hazegage* plus *ElectroniK* recorder measure and record smoke intensity in the stack. 4-page instrumentation data sheet No. 10.14-4 explains operation, has wiring diagrams. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Wayne and Windrim Aves, Philadelphia 44, Pa.

R17 **SPECIAL-PURPOSE INSTRUMENTS** — 8-page bulletin 10A gives basic data on insulation and ground resistance, dielectric strength testing instruments. Brief descriptions of complete line, photos, specifications, detailed bulletins. Associated Research, Inc, 3770 W Belmont Ave, Chicago 18, Ill.

R18 **GAUSS METERS**—Also indicating, recording fluxmeters to measure magnetic properties. 12-page bulletin GEC-777 has photos, diagrams, gives features, prices. General Electric Co, Schenectady 5, N. Y.

R19 **OHMMETER** — Low resistance, general purpose type. Two ranges —0 to 1000 and 0 to 10,000 microhms. 4-page bulletin 24-46 gives specifications, operating instructions, photos. James G Biddle Co, 1316 Arch St, Philadelphia 7, Pa.

R20 **METER SOCKETS** — 18-page booklet B-5284 gives information on how to select the proper meter socket, with initial information on only type of service desired and wire size. Socket descriptions, information on circuit-closing provision, terminals, style nos., etc. Westinghouse Electric Corp, Box 2099, Pittsburgh 30, Pa.

R21 **VOLT AMMETER** — *Amprobe* snap-around type for service work. 16-page booklet No. 504 gives specifications, dimensions, case histories. Pyramid Instrument Corp, 630 Merrick Road, Lynbrook, N. Y.

R22 **THERMOHMS** — 34-page catalog EN-S4 lists entire line of general and specialized resistance thermometers, with parts and accessories. Photos, specifications, wiring diagrams, uses. Leeds & Northrup Co, 4934 Stenton Ave, Philadelphia 44, Pa.

R23 **STROBOSCOPES**—8-page bulletin describes instruments and auxiliary light sources. Specifications, uses, prices, photos. General Radio Co, 275 Massachusetts Ave, Cambridge 39, Mass.

R24 **TELEMETERING** — 4-page instrumentation data sheet No. 9.1-10 describes system variable measurement with wire speed transmission to central locations. Requirements, application, equipment, operation discussed. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

METERS AND INSTRUMENTS, MECHANICAL

S1 **COMBUSTION CONTROL**—Three bulletins on automatic controls and instruments for draft control systems available. One bulletin deals with oil, a second with gas, and a third with stoker-firing. Application details and wiring diagrams included in each. Perfex Corp, Industrial Controls, 500 W Oklahoma Ave, Milwaukee 7, Wis.

S2 **CORROSIVE LIQUIDS**—Guide to the proper selection of meters for measuring more than 200 liquids with varying corrosive characteristics. Contains a simplified specification sheet, dimensions, and operating data. 12-page bulletin No. 0G400. Rockwell Mfg Co, 400 N Lexington Ave, Pittsburgh 8, Pa.

S3 **RUNNING-TIME RECORDER** — Gives information concerning the application of the new Series 500 running-time recorder to presses, factory machinery, refrigerators, pumps and motors, conveyors, continuous ovens and furnaces. Well illustrated. Bulletin No. OP1504. Bristol Co, Waterbury 20, Conn.

S4 **CO_2 RECORDER**—Gives information on the Hays automatic CO_2 recorder complete with application details, description of orsat principle of operation. Selector chart is included as a guide to mountings and various models. 4-page bulletin No. 51-533. Hays Corp, Michigan City, Ind.

S5 **LOW PRESSURE INSTRUMENTS** —Describes a line of draft and low pressure instruments such as indicators, recorders and controllers. Includes information on calibrating springs, diaphragm units, differential given. 20-page bulletin No. 51-667. Hays Corp, Michigan City, Ind.

S6 **PROCESS CONTROL** — Measurement of pH, redox and conductivity in industrial control systems is comprehensively covered. Fundamental principles of electro-chemical measurements as well as final control elements for automatic control systems are included. 24-page bulletin No. B51-2. Minneapolis-Honeywell Regulator Co, Station 40, Wayne & Windrim Aves, Philadelphia 44, Pa.

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S7 **TORQUEMETERS** — Describes and illustrates Baldwin SR-4 torquemeters based on measurement with special SR-4 resistance wire strain gages. 8-page bulletin No. 328. Baldwin-Lima-Hamilton Corp, Philadelphia 42, Pa.

S8 **VISCOMETERS** — "A Brookfield Viscosity Packet" designed to provide complete, up-to-date information on both Brookfield viscometers and the general subject of viscosity. Packet includes 8-page catalog, data sheet, price lists, and "What Users Say" brochure. Brookfield Engineering Laboratories, Inc, Stoughton, Mass.

S9 **TACHOMETER INDICATOR** — Features the Series 42P tachometer indicator for speed measuring applications where a particularly wide range of speed measurement is desired. 2-page data sheet No. 42P. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

S10 **CONDENSATE METER** — Explains design, construction, installation and operation of a rotary condensate meter for determining steam consumption where all condensate can be captured. Size, dimension and weight table, and simplified piping diagrams included. 4-page bulletin No. R-513. American District Steam Co, Inc, North Tonawanda, N. Y.

S11 **FLOW RATIO CONTROLLER**—Describes Ratomatic flow ratio controllers, complete systems for proportioning the flow of fluids in two or more lines. Principle of operation, reasons for this improved ratio control, and typical applications are included. 8-page catalog No. 53. Fischer & Porter Co, 4600 County Line Rd, Hatboro, Pa.

S12 **GAS ANALYZER AND ALARM** —Contains a discussion of the GP blast furnace gas analyzer and alarm developed to measure concentration of dust in blast furnace gas, and in any type of solid suspended in air or gas. Included in bulletin is a bill of material for one gas dust analyzer; typical chart from gas-dust analyzer and recorder used in a steel mill; calibration curve chart. 10-page bulletin. General Power Plant Corp, 381 4th Ave, New York 16, N. Y.

S13 **RECORDING THERMOMETERS** —Descriptive information and specifications covering recording thermometers, dial indicating thermometers, recording gages, transformer thermometers and freezer thermometers. 8-page bulletin. Electric Auto-Lite Co, Instrument & Gage Div, Toledo 1, Ohio.

S14 **TACHOMETER INDICATORS**—Discusses new multiple head, single range, fixed installation tachometer indicators for monitoring speeds of many remotely located machines from one convenient location. 4-page data sheet No. 42R. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

S15 **OXYGEN RECORDER**—Descriptive data on the Hays magnotherm oxygen recorder with sections devoted to analyzing, recording, gas sampling systems, and results. 16-page bulletin No. 51-829. Hays Corporation, Michigan City, Ind.

S16 **PYROMETERS AND PYROMETER CONTROLLERS** — For temperatures to 4000 F. Wall, switchboard, and flush panel mounting, for gas, electric and oil-fired furnaces. Bulletin No. P1244. Bristol Co, Waterbury 20, Conn.

S17 **pH MEASUREMENT AND CONTROL**—Recording and controlling instruments. Glass and calomel electrodes for immersion and flow uses. Specifications, applications, illustrations. 24-page bulletin No. pH 1302. Bristol Co, Waterbury 20, Conn.

S18 **PRESSURE TRANSMITTERS** — 4 types: Bourdon tube (15-10,000 psi); gage pressure bellows (0-10, -200 in. water); absolute (0-50, -30 in. mercury); differential (0-20, -300 in. water). Use with standard recorders and indicating instruments. Application, operation, wiring diagrams. Four 4-page bulletins, No. 61, 69, 70, 71. Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

S19 **DIFFERENTIAL CONVERTER** —Pneumatic balance-type flow transmitter. Continuous range change adjustment from 0-20, to 0-200 in. water. Specifications, installations, operating principles. 16-page catalog No. 2281. Minneapolis-Honeywell Regulator Co, Industrial Div, Station 40, Philadelphia 44, Pa.

S20 **PORTABLE ANEMOMETER** — Instantaneous direct readings of air velocity from 0 to 6000 fpm. Operates from temperature differences. 2-page **Air Meter** bulletin. Also **Compensated Thermal Anemometer and Flow Meter,** AIEE reprint. 12 pages. Hastings Instrument Co, Inc, Hampton, Va.

S21 **VARIABLE-AREA FLOW METERS**—40-page handbook 10596 gives meter sizing and calibration prediction data. Describes variable-area meters, tubes and floats, compares them with variable-head meters. Curves, charts, capacities, dimensions. Fischer & Porter Co, Hatboro, Pa.

S22 **GAGES** — *Magnehelic*, air filter, hook and smoke gages, slack tube manometers pictured and described in 12-page catalog. Ranges and dimensions. F W Dwyer Mfg Co, 317 S Western Ave, Chicago 12, Ill.

S23 **SCIENTIFIC EQUIPMENT**—*Burrell Announcer* published 6 times a year. Includes feature articles, description of new scientific apparatus. Burrell Corp, 2223 Fifth Ave, Pittsburgh, Pa.

S24 **PYROMETERS**—Hand units for surface, liquid, gas and molten metal temperatures, 0-1500 F. 2-page bulletin GEC-836 gives specifications, application, operation. General Electric Co, Schenectady 5, N. Y.

S25 **CONTINUOUS SAMPLING MONITOR**—Simplifies quality control by eliminating 100% inspection. 4-page bulletin GEA-5738 describes operation, installation. General Electric Co, Schenectady 5, N. Y.

S26 **TACHOMETERS** — Continuously indicating, accuracy to ¼%, ranges 36 to 100,000 rpm. 2-page technical data sheet 42HJK gives speed ranges, specifications. Metron Instrument Co, 432 Lincoln St, Denver 9, Colo.

S27 **INDUSTRIAL INSTRUMENTS**—28-page composite catalog No. 5000 describes the principal instruments, control devices, and related components, manufactured by the industrial div. General specifications given, catalogs with complete information listed. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne and Windrim Aves, Philadelphia 44, Pa.

S28 **PICKUPS**—For linear and torsional vibration, and acceleration. 8-page bulletin CEC 1503 gives data on selection, application, uses. Specifications, photos, dimensions. Consolidated Engineering Corp, 300 N Sierra Madre Villa, Pasadena 8, Calif.

S29 **SHAFT-MONITOR** — Shaft-position indicators show angular position of a rotating shaft. Up to 20 readings per second, accuracy to ± .09 deg. 4-page bulletin gives description, operation, construction. Photos, characteristics. Engineering Research Associates, Inc, 1902 W Minnehaha Ave, St Paul, Minn.

S30 **FLUE GAS ANALYZER** — Provides continuous recorded combustion analysis. Uses Davis thermal conductivity gas analyzer in combination with Brown *ElectronIK* recorder. Instrumentation Data Sheet 10.15-3a has 4 pages of photos, description. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne, and Windrim Aves, Philadelphia 44, Pa.

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S31 **SMOKE RECORDER**—Developed primarily for use with electronic smoke, turbidity and color photo units. 2-page bulletin 512 gives description, specifications, wiring diagram. Ess Instrument Co, Bergenfield, N. J.

S32 **FLOW METERS**—For recording, integrating, indicating, automatic controlling, and telemetering flow of fluids. 40-page bulletin F1605 describes mechanical and electrical units. Photos, applications. Sales Promotion Dept, Bristol Co, Waterbury 20, Conn.

S33 **MINIATURE RECORDER** — Strip-chart type, designed for graphic panel use. No back-of-panel adjustments. 6-page specification sheet 769 gives photos, dimensions, specifications, operation. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Aves, Philadelphia 44, Pa.

S34 **RECORDING POTENTIOMETER** —4-page instrumentation data sheet No. 10. 14-6 describes operation of a gas dust analyzer with *ElectronIK* potentiometer. Sampling layout, operation of instrument, application. Minneapolis Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Aves, Philadelphia 44, Pa.

S35 **FILTER GAGES**—Mechanically operated. Measure rate of flow, loss of head, water level. 4-page bulletin 450-H10 gives description, principles of operation, specifications. Builders-Providence, Inc, 345 Harris Ave, Providence 1, R.I.

S36 **LOW-PRESSURE CELLS** — 0-10 to 0-100 psi capacity for measuring variations in gas or liquid pressures. 2-page bulletin 326 has photos, wiring diagram, dimensions, specifications. Baldwin-Lima-Hamilton Corp, Philadelphia 42, Pa.

S37 **NON-FROSTING GAGES** — Standard and large chamber, reflex and transparent types. 2-page bulletin unit 177, has photos, descriptions. Jerguson Gage & Valve Co, 80 Fellsway, Somerville 45, Mass.

S38 **CO_2 RECORDER** — *Condu-Therm* unit works on thermal conductivity principle; electronic type operation. 12-page bulletin 51-1008 gives description, operation, applications. Hays Corp, Michigan City, Indiana.

★ **LOAD CELLS**—Change mechanical force into linear electrical signal to be fed to recorders and indicators. Torsion bar and cantilever beam types. Ranges 0-100, 0-2500 lbs. Two 4-page folders No. 62 and 65. ★ Write direct on company letterhead to Automatic Temperature Control Co, Inc, 5200 Pulaski Ave, Philadelphia 44, Pa.

S39 **RADIAMATIC PYROMETERS** — General purpose, low range, small target, and miniature types, also accessories. 28-page catalog 9300 describes complete line. Operation, theory, construction, typical applications. Minneapolis - Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Ave, Philadelphia 44, Pa.

S40 **ADJUSTABLE PORT VALVES**—For gas, air, oil, steam and water regulation. 12-page catalog 1800 gives mounting dimensions, specifications, maximum pressures, ordering information, principle of operation. Minneapolis-Honeywell Regulator Co, Brown Instruments Div, Station 40, Wayne & Windrim Ave, Philadelphia 44, Pa.

S41 **FLOW METERS**—*Flowrator*, bypass, sight flow, etc., types. Available from stock. 8-page brochure 10529 gives specifications, capacities, sizes, dimensions. Fischer & Porter Co, 5580 County Line Rd, Hatboro, Pa.

S42 **INSTRUMENT PANELS** — Cabinet type. Self-contained units, standard cutouts. Dimensions, specifications, prices. 4-page bulletin No. P1-2. Wheelco Instruments Co, 847 W. Harrison St, Chicago 7, Ill.

S43 **THERMOMETERS** — Indicating and recording types. 4-page specification sheet No. 600 gives construction, dimensions, operation. Minneapolis-Honeywell Regulator Co, Industrial Div, Station 40, Wayne and Windrim Ave, Philadelphia 44, Pa.

S44 **THERMOCOUPLE AND PYROMETER SUPPLIES** — 56-page combination catalog and handbook. No. P1238, gives specifications, illustrations, prices, calibration data. The Bristol Co, PO Box 1790, Waterbury 20, Conn.

S45 **OPTICAL STRAIGHTEDGE** — Measures surface flatness with reference beam of light. 3 1/3 to 13 ft long. Photos. 4-page catalog No. 20. F T Griswold Mfg Co, W Lancaster Ave, Wayne, Pa.

S46 **LIQUID LEVEL GAGE** — Remote reading type. Works on hydrostatic heads, indicates up to 100 in. of level variation. 8-page bulletin No. 176. Operating principle, photos, dimensions. Jerguson Gage & Valve Co, 80 Fellsway, Somerville 45, Mass.

PIPING, FITTINGS, VALVES AND SPECIALTIES

T1 **SAFETY-RELIEF VALVES** — Manual, "Principles of Manifold Discharge Piping Application with Farriseal and Balanseal Safety-Relief Valves," proposes an approach to the design of discharge header systems based on the partial or complete elimination of back-pressure effects on tied-in safety-relief valves. 34-page manual No. 51-B. Farris Engrg Corp, Palisades Park, N. J.

T2 **STEAM TRAPS**—Presents data on a trap selector for steam process equipment, industrial space heating equipment, steam generation and distribution equipment, laundry, restau-

rant and hospital equipment. Capacities and trap selection tables are given for each type. 20-page Bulletin No. T-1750. Yarnall-Waring Co, Mermaid Lane, Philadelphia 18, Pa.

T3 **OIL STRAINERS** — Contains information on Duoflo suction strainers and discharge strainers. Dimensions, capacity, sizes and list prices, are given. 4-page bulletin No. 100. Sheffler-Gross Co, Drexel Bldg, Philadelphia, Pa.

T4 **STEAM TRAPS** — Illustrates and describes a line of industrial steam traps, radiator traps, expansion steam traps, weight operated traps, continuous flow gasoline traps, piston operated traps, and separators. Includes capacity tables, installation diagrams, size data for specific applications. 30-page catalog No. 751. W H Nicholson & Co, 12 Oregon St, Wilkes-Barre, Pa.

T5 **PURIFIERS** — Illustrates and describes functions of nine types of purifiers for entrainment separation in air, steam, vapor, gas applications in power generation, petroleum refining, chemical and food processing fields. 4-page bulletin No. G-51. Centrifix Corp, 3608 Payne Ave, Cleveland 14, Ohio.

T6 **VAPOR PURIFIER**—Gives data on the Hi-eF internal type purifier for installations inside steam drums, flash tanks, evaporators, packed towers, bubble-cap towers, deodorizers and stills. Dimension table, specifications, and operation included. 4-page bulletin No. 100. Steam Specialty Div, V D Anderson Co, 1935 W 96th St, Cleveland 2, Ohio.

T7 **HOSE FITTINGS AND LINE OILERS** — Sizes, parts numbers and applications of Blue Brute hose fittings given in 4-page bulletin No. H-1200-B44. A 2-qt line oiler is pictured and described with detailed specifications in 2-page specification sheet No. H-1200-B45. Worthington Corp, Harrison, N. J.

T8 **STEAM SPECIALTIES** — Covers Squires steam specialties such as steam and air traps, reducing valves, pressure regulators, pump governors, temperature regulators, feedwater controls. Price list included. 40-page catalog. C E Squires Co, 18502 Syracuse Ave, Cleveland, Ohio.

T9 **STEAM TRAPS**—Detailed information on the Yarway impulse steam trap for power plants, steam distribution systems, steam processes and marine service. 24-page bulletin No. T-1740. Yarnall-Waring Co, Chestnut Hill, Philadelphia 18, Pa.

T10 **VALVE PIPING TIPS**—A useful sheet of tips on valve piping illustrates installation hints for fitters and plumbers. Sheet No. F-4774. Barber-Colman Co, Rockford, Ill.

T11 **HEAVY-DUTY COUPLING** — Describes heavy-duty wedge-lock coupling for use on temporary or permanent pipe lines. Specifications are included in range of light-weight pipe sizes from 8- to 30-in. in diameter. 4-page bulletin No. 513. Naylor Pipe Co, 1230 E 92nd St, Chicago 19, Ill.

T12 **EXPANSION JOINTS**—Free-flexing for low, controlled-flexing for medium and *Flexonics* for high pressure applications. Also dual, hinged, balanced and bulkhead units. 20-page bulletin CMH-127 gives specifications, sizes, amount of expansion, uses. Photos, diagrams. Flexonics Corp, 1397 S 3rd Ave, Maywood, Ill.

T13 **PIPING SPECIALTIES**—Temperature controllers, steam traps, pressure reducing valves, venting valves, flow valves, supply valves, float trans, etc. Catalog sheets give specifications, photos, line diagrams. Hoffman Specialty Co, 1001 York St, Indianapolis 7, Ind.

T14 **BOILER TUBES** — Bent and straight, copper and steel. 6-page bulletin gives list prices, working pressures, shipping weights. Boiler Tube Co of America, McKees Rocks, Pa.

T15 **TUBE FAILURES** — 40-page booklet TR516 presents factors affecting tube life in high-pressure, high-temperature use. Shows results of failure investigations on boiler, heat exchanger, etc., tubes in power, oil and chemical processing fields. Tubular Products Div, Babcock & Wilcox Co, Beaver Falls, Pa.

T16 **TUBE FITTINGS** — Also tube-to-pipe adapters, fabricating equipment. Brass, aluminum, steel and stainless construction. 76-page catalog has photos, drawings, dimensions on complete line. Parker Appliance Co, 17325 Euclid Ave, Cleveland 12, Ohio.

T17 **STEAM TRAPS** — Open bucket float and thermostatic types. Also strainers, vents, air eliminators. 20-page catalog 600 gives capacities, construction, dimensions, photos. Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

T18 **SEPARATORS** — For steam, oil, air and gas. 28-page catalog 500 gives descriptions, photos, dimensions, pressure drop, steam flow and velocity charts. Wright-Austin Co, 3245 Wight St, Detroit 7, Mich.

T19 **BRONZE VALVES**—With renewable composition discs. 4-page folder gives specifications, standard sizes, illustrates basic valve types. Fairbanks Co, 393 Lafayette St, New York 3, N. Y.

T20 **EXPANSION JOINTS**—Slip type, with single and double joints. 150 and 300 lb flanged ends. 8-page bulletin 251 has photos, dimensions, thermal expansion curves. The Royalton Co, Inc, Gasport, N. Y.

T21 **SIGHT FLOW INDICATORS** — For checking flow and fluid in pipe lines. Size ½ to 4 in, 350 to 50 lb pressure ratings with pyrex. 2-page bulletin has dimensions, photos. Trinity Equipment Corp, 472 Westfield Ave, E, Roselle Park, N. J.

T22 **REGULATING VALVES** — Double-seated diaphragm type for use with control instruments. Sizes ½ to 10 in., 125 to 600 lb. 4-page bulletin 513 has photos, dimensions. Leslie Co, Lyndhurst, N. J.

T23 **WATER AND STEAM VALVES** —Float, altitude, check, reducing, relief, solenoid-operated, non-return types. 8-page bulletin G-3 has photos, sizes, features. Golden Anderson Valve Specialty Co, 2070 Keenan Bldg, Pittsburgh 22, Pa.

T24 **SOLENOID VALVES**—For high-pressure operation in hydraulic systems handling non-corrosive fluids. 8-page bulletin has photos, diagrams, applications. Waterman Engineering Co, 725 Custer Ave, Evanston, Ill.

T25 **BLOW-OFF VALVE** — Rotary disc, continuous *Uniblow* unit insures control of boiler blow-off. 15 calibrated orifices allow changes in flow rate. 4-page bulletin 152 shows construction, method of installation. Uniblow Valve Co, 1920 W 77th St, Cleveland 2, Ohio.

T26 **PIPE HANGERS**—Constant support type in 25 sizes from 2 to 12 in., capacities from 50 lb up. 8-page catalog 511 has diagrams, dimensions, typical arrangements. Bergen Pipesupport Corp, 50 Church St, New York, N. Y.

T27 **PIPE HANGERS** — Presents a line of spring hangers of the variable-support type, suitable for support of piping and allied equipment subject to positional changes resulting from thermal expansion of equipment. 12-page catalog No. 501. Bergen Pipesupport Corp, 15 Park Row, New York 7, N. Y.

T28 **RELIEF VALVES** — Gives data on 2 new multiple-assembly relief valves for large hot-water heating boiler. 2-page bulletin No. P-18. McDonnell & Miller, Inc, 3500 N Spaulding Ave, Chicago 18, Ill.

T29 **GATE AND CHECK VALVES** — Featured is a line of Ludlow valves including double disc gate valves, all-iron low-pressure gate valves, iron blast gates, swing check valves and different types of floor stands. Dimensions and list prices are included. 64-page catalog No. 202-A. Ludlow Valve Mfg Co, Inc, Adams St, Troy, N. Y.

For copies of catalogs use cards, page 173

T30 **VALVES, WATER WORKS** — Describes Ludlow valves and fire hydrants for water works service. Diagram, sizes and prices are given. 32-page catalog No. 201-C. Ludlow Valve Mfg Co, Inc, Adams St, Troy, N. Y.

T31 **NOZZLES AND FLANGES** — Describes and illustrates Taylor forge nozzles, welding necks and large diameter flanges. A 38-page company publication, "Modern Flange Design," is incorporated as a part of this 72-page catalog, No. 501. Taylor Forge & Pipe Works, P O Box 485, Chicago 90, Ill.

T32 **VALVES, HEAVY LIQUIDS** — Data on Rollo valves for viscous liquids and liquids with solids. 4-page bulletin No. W-404-B4. Worthington Corp, Harrison, N. J.

T33 **VALVE CATALOG** — Covers the company's complete line of valves. Sectional views, installation data, and diagrams are given. 44-page catalog. Ross Operating Valve Co, 120 E Golden Gate, Detroit 3, Mich.

T34 **PREFABRICATED PIPING** — Discusses advances made in field of high- and low-pressure piping subassemblies. Describes facilities for fabricating jobs from carbon steel, carbon moly, all alloys and stainless steel piping. 8-page bulletin. Western Piping Supply Div, Lummus Co, 504 W 145th St, East Chicago, Ind.

★ **SAFETY HEAD** — Presents numerous charts and tables covering almost any phase of safety head information. Fully illustrated with cutaway drawings and typical installation photos. 52-page catalog No. 54. Black, Sivalls & Bryson, Inc, 7500 E 12th St, Kansas City 3, Mo. ★Write direct to manufacturer on company stationery giving name and title.

T35 **STEAM COSTS**—Booklet, "How Increasing Your Steam Costs Can Save Money" answers 16 provocative questions such as: How little steam do you need?—Can your space heating system run wild?—Are bypasses necessary? 8-page booklet No 2171 Sarco Co, Inc, Empire State Bldg, New York 1, N. Y.

T36 **OIL VALVES** — Gives data on Micro Cam oil valves for controlling the flow of oil to industrial oil burners. Applications, valve capacities, and dimensions are included. 4-page catalog No. 704-A. Hauck Mfg Co, 124-136 Tenth St, Brooklyn 15, N. Y.

T37 **STEAM AND AIR TRAPS** — Gives prices and data on steam and air traps featuring the Armstrong inverted bucket principle. Section devoted to calculation of condensate loads and selection of traps to handle these loads. Capacity chart and parts list are included. 12-page catalog. Armstrong Machine Works, Three Rivers, Mich.

T38 **CREEP STRESS CARD** — Card gives creep stress data on a number of tubing steels for rates of 1% elongation in 10,000 and 100,000 hours at temperatures from 800 F to 1500 F. Data Card No. 102-F. Tubular Prods. Div. Babcock & Wilcox Co., Beaver Falls, Pa.

★ **PIPE HANGERS** — Presents a complete line of adjustable pipe hangers, vibration eliminators, and supports. Technical section includes information on specifications, hanger problems, weight of piping materials,

thermal expansion pipe chart, Flex-Anal charts and typical piping problem solved by them. 96-page catalog No. 51. Blaw-Knox Co, 1525 Pennsylvania Ave, Pittsburgh 12, Pa. ★Write direct to manufacturer on company stationery giving name and title.

T39 **ALLOY STEEL TUBING**—Condensed data on microstructure, critical points, effect of alloy elements, forging, machining, welding and thermal treatment for 14 grades of low carbon alloy steels used in production of tubular parts. 4-page bulletin No. TDC 149. Tubular Products Div. Babcock & Wilcox Co, Beaver Falls, Pa.

T40 **INSTRUMENT TUBING** — Describes advantages of plastic-coated metal tubing where high corrosion resistance is required. Photographs of installations and tubing service data for severe applications are included. 2-page bulletin "Dekoron Instrument Tubing." Samuel Moore & Co, Dekoron Tubing Div, Mantua, Ohio.

T41 **VALVES AND FITTINGS** — For ammonia and Freon. Special "Maypul" steel, standard sizes. Complete catalog information, price, weight, dimensions. Photos, tables of engineering data. 40-page catalog. Frick Co, Waynesboro, Pa.

T42 **WATER HAMMER**—Cause, effect and control in piping systems. 8-page bulletin gives results of tests on intensity, action of pressure wave, origin of water hammer, effects of check valves. Photos, diagrams, curves. Williams Gauge Co, 1620 Pennsylvania Ave, Pittsburgh 33, Pa.

T43 **TANK VENTING EQUIPMENT** —Tank equipment, gas control, safety devices for handling and conserving combustible or toxic liquids. Photos, diagrams, dimensions. 32-page bulletin No. CP-2001. Vapor Recovery Systems Co, 2820 N Alameda St, Compton, Calif.

T44 **RECEIVER-TYPE PURIFIER**—Delivers high-quality steam; removes destructive entrainment from vapor lines. 2-page condensed bulletin No. 300. Dimensions, specifications. V D Anderson Co, 1935 W 96th St, Cleveland 2, Ohio.

★ **SAFETY VALVES**—For boilers, compressors, heat exchangers, pressure piping. Charts give capacity for 100% protection if pressure reducing valve fails. Steam and air-gas capacity tables. 16-page bulletin No. 851. Marine and Industrial Products Co, 1150 W Marquette Rd, Chicago 21, Ill. ★Write direct, not to POWER. Request on company letterhead with your title.

T45 **AIR CYLINDERS**—Standard and cushioned, single and double end rods, internal and external threads. Up to 150-psi air, 300-psi oil. All standard cylinders. Catalog section No. 55. Rivett Lathe and Grinder, Inc, Brighton 35, Boston, Mass.

T46 **PIPE AND TUBING**—Nickel and high alloy. 28-page Technical Bulletin No. T-17 on fabrication and design, including bending and colling, welding procedure, tables on mechanical and physical properties, ASME code requirements. International Nickel Co, Inc, Technical Service Section, 67 Wall St, New York 5, N. Y.

T47 **SOLENOID OIL VALVES** — For heavy or light oils to 300 psi, 250 F. UL and FM approval. Cam type for positive shutoff. Photos, dimensions, operation. 2-page bulletin No. 710. Hauck Mfg Co, 124-136 Tenth St, Brooklyn 15, N. Y.

★ **PIPE COUPLING**—For ventilating and low-pressure service. Wedge lock type for 8- to 30-in. dia. 4-page bulletin No. 514. ★Write direct, not to POWER, to Naylor Pipe Co, 1230 E 92nd St, Chicago 19, Ill.

T48 **VALVE REFERENCE GUIDE**—Cast- and forged-steel valves for power plant. Univalves, blowoff, instrument, nonreturn, etc. Will be in 1952 Sweet's File for Power Plants, Section 2e/ED. Edward Valves, Inc, East Chicago, Ind.

T49 **BLOWOFF VALVES**—For low- and medium - pressure boilers. Seatless and double-tightening types, for steam up to 400 psi. Photos, dimensions, operation, prices. 24-page bulletin No. B-425. Yarnall-Waring Co, Mermaid Lane, Philadelphia 18, Pa.

T50 **EXPANSION JOINTS**—Standard and special bellows assemblies for pipes and conduits. ½- to 72-in. pipe sizes, vacuum to 1000 psi. Made of stainless steel and heat- and corrosion-resistant alloys. 40-page catalog No. 51. Solar Aircraft Co, 2200 Pacific Hwy, San Diego 12, Calif.

T51 **ASBESTOS PACKINGS**—Braided, twisted, oil-resistant types. For valve stems, high-pressure and temperature steam, pump service. Size, weight, service recommendations, illustrations. 8-page bulletin. Raybestos-Manhattan, Inc, Packing Division, Manheim, Pa.

T52 **AIR LINE CLEANER**—Mechanical unit removes oil, moisture, dirt from compressed gas and air lines. 8-page bulletin 252 gives operation, installations, size selection data. Logan Engineering Co, Aridifier Div, 4901 W Lawrence Ave, Chicago 30, Ill.

T53 **PIPE STRAINERS**—Self cleaning units in ¼- to 3-in. sizes. 4-page bulletin 252 gives specifications, prices, applications. Wm J Gleason Jr, Steam Specialties Div, V D Anderson Co, 1935 W 96th St, Cleveland 2, Ohio.

T54 **PUMP AND CHECK VALVES**—For pumps, compressors, engines. Two 8-page bulletins give photos, dimensions, ordering instructions for all standard units. Durabla Mfg Co, 114 Liberty St, New York 6, N. Y.

T55 **DIAPHRAGM CONTROL VALVES**—Also liquid-level controllers, pressure controllers, safety heads, welded steel tanks, walkways. 20-page bulletin *BS&R in the Process Industries* gives specifications, dimensions, photos. Black, Sivalls and Bryson, Inc, Public Relations Dept, 7500 E 12th St, Kansas City 3, Mo.

T56 **HYDRAULIC VALVES**—Up to 1500 psi: hand, foot, cam, solenoid, oil pressure or air pressure operated. ¼ to 1½ in. sizes. 28-page catalog No. 203 lists 128 different models. Drawings, specifications. Rivett Lathe & Grinder, Inc, Brighton 35, Boston, Mass.

T57 **TUBE FITTINGS** — *Swagelock* leakproof line. Available in brass, aluminum, steel, stainless steel and monel. 12-page catalog No. B-151. Photos, dimensions, installation recommendations. Crawford Fitting Co, 884 E 140th St, Cleveland 10, Ohio.

T58 **COMPRESSION PIPE COUPLINGS**—For ¼ to 14 in. pipe and tubing sizes. Joins threaded or non-threaded pieces. 4-page bulletin. Morris Coupling & Clamp Co, PO Box 632, Ellwood City, Pa.

T59 **BOILER SERVICE VALVES** — For surface blow, bottom blowoff, water-column blow-off. Quick- and slow-opening types. Photos, diagrams, dimensions. 24-page bulletin No. E 125. Everlasting Valve Co, Dept 42, 49 Fisk St, Jersey City 5, N. J.

★ **METAL HOSE AND BELLOWS**—16-page catalog No. CMH-123 gives specifications in quick-reference form. Characteristics, complete size ranges, applications, recommended uses. ★Request on company letterhead. Flexonics Corp, 1397 S 3rd Ave, Maywood, Ill.

T63 **ERW TUBING CHART** — Electric resistance welded carbon steel tubing, ¼- to 4-in. OD, .032 to .213 in. wall thickness, for pressure or mechanical service. Tubular Products Div, Babcock & Wilcox Co, Beaver Falls, Pa.

T64 **SPRAY NOZZLES** — Non-clogging type for cleaning purposes. 4-page folder 2386 gives dimensions, capacities, uses. Link-Belt Co, 307 N Michigan Ave, Chicago 1, Ill.

PRIME MOVERS

U1 **DIESEL ENGINE** — Describes Type FV diesel engines built in 6, 8, 12 and 16 cylinder types for locomotive service, draglines and electric power generation in industrial plants. Engineering data, specifications and power ratings. Bulletin No. FV-63. Cooper-Bessemer Corp, Mt Vernon, Ohio.

U2 **GAS TURBINES** — Contains information on a gas turbine designed for centrifugal compressor drive for pumping natural gas. Included are features, application and operation data together with line drawings, charts and photographs. 16-page bulletin No. GEA 5530. General Electric Co, Schenectady 5, N. Y.

U3 **JACKET WATER COOLERS** — Tells how unit heaters use waste heat recovered from engine and compressor jacket water to reduce plant-heating costs. Shows how to select correct size and type of unit heaters and gives typical example illustrating calculations. 4-page bulletin. Modine Mfg Co, Racine, Wis.

U4 **JACKET WATER COOLERS** — Jacket water coolers for gas, gasoline, diesel engine and fluid coupling are described. Illustrates new design features and accessories. 4-page catalog No. 1351. Young Radiator Co, Racine, Wis.

U5 **SINGLE-STAGE TURBINES** — mechanical drive. New type H line. 4-page bulletin T-124 gives construction features, diagrams, dimensions, specifications. Murray Iron Works Co, Burlington, Iowa.

U6 **TURBINE-GENERATOR UNITS** —NEMA ratings 2000 to 7500 kw. Condensing type for power generation only; non-condensing and automatic extraction types for process steam and a steam-power balance. 8-page bulletin 03B7654 has diagrams construction. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

U7 **TURBO-GENERATORS** — Brush-Ljungstrom units. 34-page publication No. 61003 gives details of design and construction features. Photos, cross-section diagrams, theory of operation, overall dimensions. Brush Electrical Engineering Co, Ltd, Loughborough, England.

U8 **DIESEL USES** — Uses of diesel engines in our modern economy. Booklet written in rhyme. Detroit Diesel Engine Div, General Motors Corp, Detroit 28, Mich.

U9 **CONTROLLED VOLUME PUMPS** —Motor - driven or air - powered units. Pump liquids from 3 ml per hr to 50 gal per minute, against pressures to 25,000 psi. Automatic controls. For boiler-water treatment, automatic pH control, pressure generators, etc. 24-page bulletin No. 151. Milton Roy Co, 1300 E Mermaid Lane, Philadelphia 18, Pa.

U10 **SUPAIRTHERMAL ENGINE** — For diesel, duafuel and spark-fired gas operation. 4-cycle types for stationary and marine service. 425 to 3200 bhp. Produces 1/3 more hp than turbocharged engine. 12-page bulletin No. 191. Nordberg Mfg Co, Milwaukee 7, Wis.

U11 **MECHANICAL - DRIVE TURBINES**—Impulse type for steam, gas or air operation. 6 bulletins. No. 4110-A to F. One for each of the 5 types available, from ¼ to 120 hp. Performance charts, construction details, dimensions, selection data. Sixth bulletin has general information. Pyle-National Co, 1334 N Kostner Ave, Chicago 51, Ill.

U12 **DIESEL ENGINES**—4-cycle, 1, 2, and 3-cylinder units for continuous or standby service. 10 to 45 hp, 1200 to 1800 rpm. 12-page bulletin 194 has photos, cross-section view, design features, applications. Nordberg Mfg Co, Milwaukee 1, Wis.

PUMPS

W1 **ELEVATOR PUMPS** — 25 to 110 gpm at 300 psi. Direct or v-belt drive. 6-page bulletin No. 20 gives construction, dimensions, mounting layout, performance data. Geo D Roper Corp, Rockford, Ill.

W2 **METERING PUMPS**—For industrial and biological fluids. Corrosion resistant, non-pyrogenic. Fixed or variable speed transmissions. 16-page catalog 51A has specifications, operating data. Mechanical Products Corp, 168 N. Ogden Ave, Chicago 7, Ill.

★ **VERTICAL PROPELLER PUMPS** —For flood control, drainage, irrigation and similar low head service. Bulletin W-314-B2 has drawings, dimensions. ★Request direct on company letterhead. Worthington Corp, Harrison, N. J.

W3 **CENTRIFUGAL PUMP INSTRUCTIONS**—30-page booklet 08X7613 covers installation, operation and repair of single-stage, double-suction centrifugal pumps. Lists 40 causes of trouble and their cures, gives maintenance timetable, parts nos. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

W4 **PROCESS PUMPS** — Horizontal center-line mount type, for temperatures to 850 F, heads to 625 ft, capacities to 1000 gpm. 4-page bulletin B-1605 has specifications, construction features, parts list, dimensions, cutaway drawings. Peerless Pump Div, Food Machinery and Chemical Corp, 301 West Ave 26, Los Angeles 31, Calif.

W5 **PNEUMATIC EJECTORS** — For pumping sewage, drainage and solids-carrying liquids. 30 to 600 gpm. 12-page bulletin 4000-C shows operation, has photos, specifications. Yeomans Bros Co, 1433 N Dayton St, Chicago, Ill.

★ **CENTRIFUGAL PUMPS** — For refinery service. Types HR and HB, 1- and 2-stage volute, saddle-mounted, vertically split centrifugal pumps. 12-page bulletin W-341-B2C gives dimensions, cross-section drawings. ★Request on company letterhead. Worthington Corp, Harrison, N. J.

W6 **GENERAL - PURPOSE PUMPS** —Grease - lubricated, pedestal-mounted types. Capacities to 2500 gpm, heads to 550 ft, temperatures to 250 F. 6-page bulletin 52B6351B has dimensions, diagrams. Allis-Chalmers Mfg Co, 952 S 70th St, Milwaukee, Wis.

W7 **DELIVERY PUMPS** — Illustrates and describes three new constant delivery axial piston pumps for pressures up to 3000 and 5000 psi. Specifications and dimensions are included. 4-page bulletin No. 46601. Gilgear Co, 1560 W Pierce St, Milwaukee 4, Wis.

W8 **CHEMICAL SERVICE PUMP** — Gives data on Type G medium duty chemical service pump for process and chemical plants having semi-critical requirements. Available in 1, 1½, 1¼ and 3 in. discharge sizes and heads to 240 ft. Specifications, dimensions, selection chart. Warren Steam Pump Co, Inc, Warren, Mass.

W9 **JET PUMPS** — 20-page bulletin No. 512 gives catalog information on steam or air operated jet ejectors, water jet exhausters. Installation, operation and maintenance details, dimensions, sizes, prices, applications. Penberthy Injector Co, 1242 Holden Ave, Detroit 2, Mich.

★ **ROTARY PUMPS** — Vane type. Suction pipes 2 to 12 in., discharge lines 2 to 10 in. Capacities 25 to 1000 gpm. 4-page bulletin No. W-485-B1 gives dimensions, ratings, drawings. ★Request on company letterhead. Worthington Corp, Harrison, N. J.

★ **WET-PIT PUMPS**—*Freeflo* pumps for sump, sewage and drainage service. Non-clogging impellers. Bulletin No. W-317-B12 has drawing, dimensions, flange data. ★Request on company letterhead. Worthington Corp, Harrison, N. J.

W10 **SUBMERSIBLE PUMPS** — For deepwell pumping in wells with 6 in. inside dia or larger. 20 to 130 gpm, heads from 80 to 770 ft. 4-page bulletin No. 51-5300 has photos, capacities, installation advantages. Byron Jackson Co, P O Box 2017, Terminal Annex, Los Angeles 54, Calif.

W11 **CONTROLLED-VOLUME PUMPS** —Reciprocating, positive displacement plunger type, for high or low pressures. Simplex, duplex, or special unit models. Pump any liquid from heavy viscous liquids to light solvents, liquefied gases, etc. 24-page bulletin No. 251 has dimensions, adjustments, photos, design features. Milton Roy Co, 1300 E Mermaid La, Philadelphia 18, Pa.

W12 **BOILER FEED PUMP** — Complete description and cross-section drawing of a high pressure barrel-type boiler feed pump. Available for pressures to 3000 psi. 12-page bulletin No. 1525. De Laval Steam Turbine Co, Trenton 2, N. J.

W13 **RECIPROCATING PUMP** — Describes recently developed 3-in. stroke direct-flow triplex pump and presents features of design, construction, dimension drawings and performance data. 6-page data sheet No. 64-A. Aldrich Pump Co, Allentown, Pa.

W14 **SELF-PRIMING PUMPS**—Shows construction of the company's new electric-motor and gasoline-engine driven self-priming centrifugal pumps for contractor's service. Specifications and ratings of different sizes and types of pumps are given. 20-page bulletin No. 51-27. Chain Belt Co, 1600 W Bruce St, Milwaukee 4, Wis.

W15 **VERTICAL SUMP PUMPS** — Details of construction, selection tables and other data on vertical sump pumps, float switches, motor starters and turbine sump pumps. 8-page bulletin No. 4600-A. Deming Pump Co, Salem, Ohio.

W16 **HIGH-PRESSURE PUMP** — Describes new design of a high-pressure sanitary pump in which the fluid end is hermetically sealed from the actuating parts. Used with homogenizers and for other process services. 4-page bulletin. Scott & Williams, Inc, Pioneer Div, Empire State Bldg, New York 1, N. Y.

W17 **DIRECT FLOW PUMPS**—Gives full details on the Aldrich 6 in. stroke direct flow pump including design, performance and construction data, dimensional and sectional drawings, and pump specifications. 8-page data sheet No. 67-A. Aldrich Pump Co, Allentown, Pa.

W18 **ROTARY PUMP**—Illustrates and describes in detail an improved rotary type of pump, including sectional and exterior views, dimensions, selection chart and specifications. 8-page bulletin No. WQ-50. Warren Steam Pump Co, Inc, Warren, Mass.

W19 **VERTICAL TURBINE PUMP** — Describes Class APH-APK line of vertical, turbine-type pumps particularly applicable to bulk liquid transfer, cooling tower, dewatering and similar services where suction is taken from an open source. Pumps range in size from 6 to 30 inches. 8-page catalog No. 7228. Ingersoll-Rand Co, 11 Broadway, New York 4, N. Y.

W20 **CENTRIFUGAL SUMP PUMP** — Covers Types VS and VN centrifugal sump pumps available in wet and dry pit types. They handle clear liquids, sewage and other liquids containing solids, in eight sizes, 1½ to 8 in. 8-page bulletin No. 220. Warren Steam Pump Co, Inc, Warren, Mass.

W21 **HI-PRESSURE PUMPS** — 3½ to 60 gpm, pressures to 1000 psi. small units with 2 cylinders have 2 operating component parts, large 4-cylinder models have 3. 8-page catalog shows construction, photos, specifications, performance characteristics. Royalton Co, Inc, Gasport, N. Y.

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WATER TREATMENT

X1 **BOILER FEEDWATER TREATMENT** — For a high-pressure, high-makeup power and steam producing plant. 12-page reprint from Midwest Power Conference. Shows flow diagrams, heating and water systems, demineralizing system at Philadelphia Electric Co Schuylkill Station. Graver Water Conditioning Co, 216 W 14th St, New York 11, N. Y.

X2 **BOILER FEEDWATER TREATMENT** — 4-page folder P-30 describes *ionXchange* equipment, softeners, hydrogen-zeolite, deionizers. Illinois Water Treatment Co, Rockford, Ill.

X3 **COOLING-WATER TREATMENT** —For engine cooling systems. 4-page folder 5015 discusses chromate control in closed systems, application of treatment, dosages, test methods. Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.

X4 **WATER CONDITIONING** — 20-page bulletin 611 covers various methods and their purposes. Features improved equipment for zeolite softening, also automatic, ion exchange, deionizing, filtering, etc, equipment. Elgin Softener Corp, Elgin, Ill.

X5 **AIR AND GAS DIFFUSER**—For sewage and industrial waste treatment, water conditioning, biological manufacturing and absorption processes. 4-page folder 6530 describes *Colaflex* unit with fabric element. Infilco Inc, Box 5033, Tucson, Ariz.

X6 **UNDERDRAIN SYSTEM** — Describes a multi-plate underdrain system which channels the upflow horizontally when backwashing a water purifying plant. Typical installations and specifications are given. 4-page folder No. 5128. Layne & Bowler, Inc, Memphis 8, Tenn.

X7 **PRODUCTS AND PROCESSES** —Presents case histories of typical process applications together with brief descriptions of the equipment. 12-page bulletin No. 50-1. Infilco Inc, Box 5033, Tucson, Ariz.

X8 **CORROSION CONTROL** — Covers the causes of return line corrosion and Dearborn's corrective treatments, Formula 700 and 702. Also includes test procedures for both treatments. 4-page bulletin No. 5013. Dearborn Chemical Co, Merchandise Mart Plaza, Chicago 54, Ill.

X9 **WATER SOFTENERS** — Heavy duty series water softeners, capacities up to 600,000 grs single unit—1,200,000 grs twin unit. Pipe size up to 2-in. — tank diameter 20-, 24-, 30 and 36-in. Features, operation, specifications given. 4-page bulletin N-200. Bruner Corp, 2318 N 30th St, Milwaukee 45, Wis.

X10 **WATER CONDITIONING** — Describes Brooks services, products and methods employed in solving many water problems encountered in industries, institutions and governmental works. 16-page bulletin No. 501. Brooks Chemicals, Inc, 3304 E 87th St, Cleveland 27, Ohio.

X11 **ION-EXCHANGE MATERIALS**— Water-treating resins. Physical characteristics, exchange capacities, regeneration techniques. 16-page bulletin No. 57 on Nalcite SAR (basic anion exchanger; 28-page bulletin No. 58 on Nalcite HCR (styrene-type cation exchanger); 28-page bulletin No. 58 on Super Nalcolite (synthetic gel type zeo-

lite for cation exchange). National Aluminate Corp, 6222 W 66th Place, Chicago 38, Ill.

X12 **WATER CONDITIONERS** — Demineralizers, degasifiers, filters. Types and operation. 4-page bulletin. E H Clohessy, Gen Mgr, Penfield Mfg Co, Inc, 19 High School Ave, Meriden, Conn.

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WELDING

Y1 **SHIELDED METAL-ARC PROCESS**—For welding aluminum, aluminum bronze, silicon bronze, copper, nickels, stainless steels. Manual or automatic operation. 8-page catalog 17 shows *Aircomatic* hand gun, automatic head, and welding wires. Air Reduction, 60 E 42nd St, New York 17, N. Y.

Y2 **WELDING AND CUTTING EQUIPMENT**—Hand and machine torches, nozzles, tips, regulators, valves, etc. 64-page catalog 20-C gives information on complete line. Dimensions, photos, specifications. Victor Equipment Co, 844 Folsom St, San Francisco 7, Calif.

Y3 **STUD WELDING DESIGN**—Stud selection, specifications, locating methods and template design, methods for accommodating fillet are discussed in 8-page manual Form D-1. Charts, tables, illustrations. Nelson Stud Welding Div, Gregory Industries, Inc, Lorain, Ohio.

Y4 **WELDING ELECTRODES** — Describes alloy electrodes most widely used in the defense program. Gives short history, general uses and typical properties of *Arcaloy, Armorarc,* and *Weld-Arc* electrodes. 16-page bulletin AR51-1. F R Walsh, III, Gen Sales Mgr, Alloy Rods Co, York, Pa.

Y5 **HARD-FACING ALLOY RODS** — For electric or acetylene applications. Five 4-page bulletins Forms 320, 321, 322, 323, 324 cover the complete line, giving rod sizes, uses, applications. Victor Equipment Co, Alloy Rod & Metal Div, 11320 S Alameda, Los Angeles, Calif.

Y6 **LOW TEMPERATURE WELDING ALLOYS** — Electrodes for cast iron, steels, copper, brass, aluminum, etc. 16-page directory has photos, sizes, chart of principal uses. Eutectic Welding Alloys Corp, 172nd St and Northern Blvd, Flushing 58, N. Y.

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(*Continued from page* 156)

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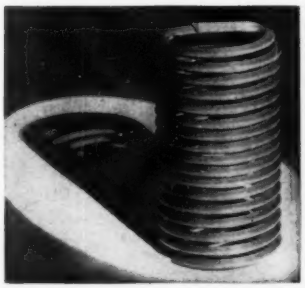

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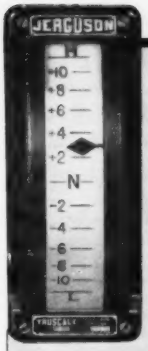

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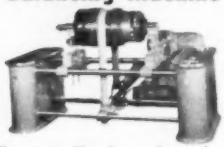

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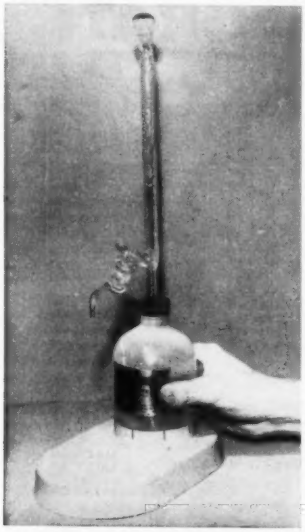

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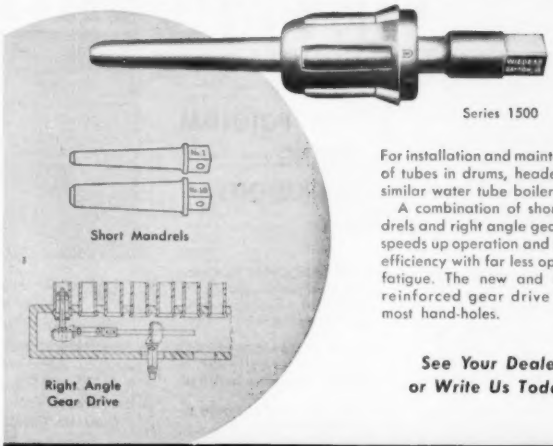

For installation and maintenance of tubes in drums, headers and similar water tube boilers.

A combination of short mandrels and right angle gear drive speeds up operation and assures efficiency with far less operator-fatigue. The new and smaller reinforced gear drive enters most hand-holes.

See Your Dealer or Write Us Today!

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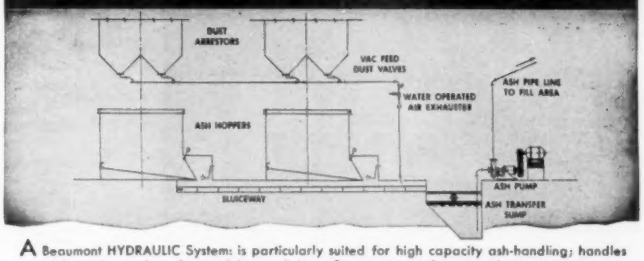
DAYTON 1, OHIO

Need Large Capacity Ash-Handling?

CHECK WITH BEAUMONT ON A HYDRAULIC ASH-HANDLING SYSTEM



A Beaumont HYDRAULIC System: is particularly suited for high capacity ash-handling; handles wet ash or dry, molten slag and large clinkers; fits any type of power plant arrangement; is completely enclosed, preventing dust or gas from escaping to the boiler room; and can be operated by one man on a part time basis.

Beaumont's Ash-Handling Division is competently staffed to give you expert recommendations on all types of ash-handling systems . . . and to provide and install the proper equipment to suit your particular requirements. Write today for the Beaumont brochure: "Answers to Your Ash-Handling Questions".

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DESIGNERS—MANUFACTURERS—ERECTORS BULK MATERIAL HANDLING SYSTEMS

Test for Electrical

LEAKAGE • SHORTS • BREAKDOWN

with

"HYPOT"

JUNIORS

HIGH POTENTIAL TESTING INSTRUMENTS

WRITE FOR BULLETIN 4A

- **ONLY ONE** instrument necessary to make high potential tests for leakage, breakdown or shorts!
- **PORTABLE,** with rugged steel case...Operates in any position!
- **SAFE** to use, with protected test leads, shielded high voltage, grounded case!
- **SIMPLE**—only three easy steps to make a complete test!
- **VISUAL INDICATIONS** from neon lights give positive test results. Audible test indication for leakage also available.
- **RANGES** 0-1500 to 0-6000 V.A.C. output. Other "Hypots" to 50,000 V.A.C. output at 5 K.W.
- **WRITE** for complete data on "HYPOTS" for your jobs.

ASSOCIATED RESEARCH, Incorporated

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For Flooring Any Area or Running Any Stairways

BATES•GRATES

Wherever you see a BATES-GRATES installation there is safety and strength with plenty of light and ventilation. Neatness too is an assured benefit.

BATES-GRATES engineering gives you every advantage with long time economy. The Hex Cross bar fillet-welded to stout main bars is a construction feature that you should investigate. Before you invest in steel flooring and stair treads get BATES details.

- STRONG
- SAFE
- EASY TO MAINTAIN
- DURABLE
- MAXIMUM LIGHTING and VENTILATION

WALTER BATES COMPANY, INC.
JOLIET, ILLINOIS

"GUNITING" with *Super* ADACHROME-CAST

...SAVES OUTAGE TIME and MONEY

Use SUPER ADACHROME-CAST to gunite your stud tube water walls.—Fine-grained to penetrate the small apertures between studs,—packs to a dense mass when shot. One user reports SUPER ADACHROME-CAST lasted twice as long and took but one-third the time to apply as compared with a plastic chrome ore installation.

Excellent for coating brickwork when free of slag.

BOTFIELD REFRACTORIES CO.

Yours, *FREE* for the asking . . . an illustrated, detailed Bulletin on *Super* ADACHROME-CAST.

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In Canada, Canadian Botfield Refractories Co., Ltd., 171 Eastern Avenue, Toronto.

In its September issue, Power presents the largest, most important editorial project in recent Power history: A 48-page special section devoted to water: Water in nature—a story of wind and weather. Why we have shortages and what we're doing about them. And the purification and conservation of water in industry.

A report of lasting value for everyone in the power field.

THE TRADE MARK WITH A MEANING
SUCCESSFUL OPERATION GUARANTEED
44th YEAR OF SERVICE—MEMBER OF A.R.A.*

MOTOR GENERATOR SET

3 ph. 60 Cycle

Qu.	KW	Make	Speed	D.C. Volts	A.C. Volts
1	2000	G.E.	514	600	13800/4000
2	2000*	G.E.	500	600	6600/11000
1	1500	G.E.	720	600	6600/13200
1	1500	Whse.	600	600	2300/4600
1	1500	G.E.	360	275	2200/4400
1	1500	G.E.	600	600	2300/4150
2	1000	Whse.	900	600	2300/4150
1	1000	G.E.	900	260	6600
1	1000(3U)	G.E.	900	250	2400/4800
1	500	Whse.	900	125/250	440
1	500	Whse.	900	250	6600/13200
1	500	Whse.	1200	125/250	2300
1	500	G.E.	720	125	2300/4000
1	400	G.E.	720	250	440/2300
1	400	Whse.	1200	250	2300
1	350	G.E.	900	125	2300/4150
1	300	A.C.	1200	125/250	2300
1	150	G.E.	1200	250	2300
1	150	Whse.	1200	275	2300
1	150	G.E.	1175	125	440
1	140(3U)	Cr. Wh.	690	125/250	2300
1	125	G.E.	1200	125	440
1	100	Delco	1200	125/250	440
1	75	G.E.	1200	125	4000
1	75	G.E.	1200	250	440
1	40	Whse.	1200	250	220

*25 Cycle

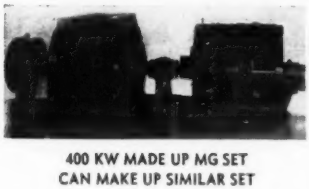
ROTARY CONVERTERS

60 Cycles

Qu.	KW	Make	Speed	D.C. Volts	A.C. Volts
1	2000	G.E.	514	600	13800
1	1000	Whse.	900	600	11000

TURBO GENERATORS

Qu.	KW	Make	Desc.
1	6000	Al. Ch.	Condensing 200/250 ISP 2300/3/60-Exc. & Surface Cond.
1	1000	Moore	Auto-Ext. Cond. 175/200# I.S.P. 5/20# G. Ext. Surface Condenser—3/60/2300.
2	1000	G.E.	Non-condensing, 175/200 lbs. I.S.P. 5/20 lbs. G.B.P., 480/3/60.
1	750	G.E.	Condensing 425#-725°TT ISP-440 V. 3 ph. 60 cy New—1944
1	500	Moore	Non-condensing — 150/200 lbs ISP 5/35 lbs. G.B.P.—3/60/480 volts direct connected exciter
2	500	G.E.	Non-condensing 175/200 lbs. I.S.P., 5/30 G.B.P., 480/3/60.
1	400	Whse.	Non-condensing 125/150# ISP 5/10# G.B.P., 240/480v. 3 ph. 60 cy.
1	300	G.E.	Non-condensing 150/175# ISP 5/15# B.P. 480V. 3 ph. 60 cy.
1	200	Whse.	Non-condensing 150# ISP 7# B.P. 240 V. 3 ph. 60 cy.



400 KW MADE UP MG SET
CAN MAKE UP SIMILAR SET

D. C. MOTORS

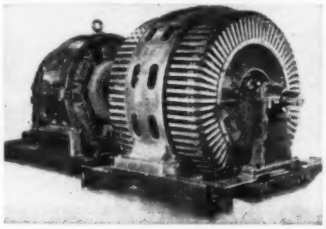
Qu.	HP	Make	Type	Volts	Speed
1—	2200	G.E.	MCF	600	360/500
1—	1750	West.		600	525/720
1—	1500	Whse.		525	600
1—	940	Whse.	QM-R. Brg.	250	140/170
1—	800/1000	Whse.		450	600/720
1—	600	Al. Ch.	MILL	230	400/800
1—	500	Whse.	Mill	600	300/900
2—	450	Whse.		550	415
1—	400	G.E.	MCF	550	360/1050
1—	300/400	G.E.	DYNA	250	1325/2500
1—	350	Cr. Wh.	CCM-151H	230	1100
1—	335	Whse.	MQ	250	300/900
1—	200/300	G.E.	MPC	230	360/920
1—	250	G.E.	MPC	230	400/500
1—	150	G.E.		600	250/750
10—	150	Cr. Wh.	83H	230	890
1—	150	Cr. Wh.	CMC-65H	230	1150
1—	150	Whse.	SK-201	230	360/950
1—	50/120	G.E.	MPC	230	250/1000
2—	100	Whse.	SK-181	230	450/1000

FREQUENCY CHANGERS

Qu.	KW	Make	Cycles	Voltage
1—	3000	G.E.	25/60	4000/2300x2300/4000
1—	2000	G.E.	25/62½	2300/4160
1—	2000	Whse.	25/62½	2300/2300
1—	1000	G.E.	25/58	4400/2300
1—	500	A.C.	25/60	11000/2300V

SYNCHRONOUS CONDENSERS

Qu.	Kva	Make	Volts	Speed
1	5000	Whse.	2300/1800	600



500 KW MG SET
IN STOCK

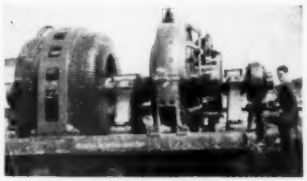
TRANSFORMERS

60 Cycles

Qu.	KVA	Make	Type	Ph.	Voltages
1	3000	Whse.	Furnace	3	26400/12000x190
3	2000	G.E.	HVDDJ	1	66000x13800
3	1250	G.E.	HT	3	13200x440/2200
3	1000	G.E.	H	1	2300x480
3	1250	G.E.	H	1	6600x550
1	1150	A.C.	OISC	3	13200x2300/480
3	500	Al. Ch.	OISC	1	11800x6600
1	500	Whse.	OISC	3	13400x216
9	300	G.E.	HT	3	2400x240/480
3	200	Wagner	OISC	1	13800x230/460
3	150	Whse.	OISC	1	33000x2300/4000
3	150	Whse.	OISC	1	34500x230/460
3	100	G.E.	OISC	1	2400x120/240
2	75	Upto	OISC	3	4160x240

RECTIFIERS

Qu.	KW	Make	Type	Volts	Speed
1—	750	G.E.	BHW	575	2300
1—	1000	A.C.	B-612	625	13500



2000 KW—MG SET
IN STOCK

A. C. MOTORS

3 ph. 60 Cycle

SYNCHRONOUS

HP	Make	Type	Volts	Speed
2—3500	G.E.	TS	2300	257
1—2500	Whse.		2300	720
2—2100	G.E.	ATI	2300	360
2—2000	Whse.		2300	120
2—1750	G.E.	ATI	2300	3600
3— 735	G.E.	ATI	2300/12000	600
1— 500	G.E.	TS 7657	2400/4800	600
1— 450	Whse.	Eng.	2200	128.5
1— 450	Whse.		2300	450
2— 350	G.E.	TS	2200	150
1— 300	Whse.		2300	720
1— 100	Whse.		550	600
1— 100	F.M.		220	1390
1— 100	E.M.		440	600
1— 85	G.E.	TS	440	1800

SLIP RING

1— 500	Whse.	CW	550	350
2— 500	G.E. unused	M-574Y	2200	900
1— 500	G.E.	IP	550	505
1— 500	G.E.	IM	440	900
1— 350	G.E.	MT442-Y	2300/4000	253
1— 300	Al. Ch.	3 Brg.	2300	505
4— 300	G.E.	ITC-5017	550	585
1— 300	Al. Chal.	ANY	2200	700
1— 250	G.E.	MT-434Y	4000	257
1— 250	G.E.	MT-559B	2200	1750
1— 250	A.C.		550	600
1— 200	Cr. Wh.	26QB	440	505
1— 200	G.E.	IM	440	425
1— 200	G.E.	MTP	440	1170
3— 200	G.E.	IM-17	440	580
1— 150 new	Whse.	CW	2300	450
4— 125	G.E.	MT-566Y	440/2200	425
1— 100	G.E.	IM-16	2200	435
1— 100	G.E.	IM	440	600
3— 100	Al. Ch.	ANY	440	695
1— 100	G.E.	MT556	2200	900
1— 75	Whse.	CW-761	2200	1725

SQUIRREL CAGE

2— 650	G.E.	FT559BY	440	3750
2— 450	Whse.	CS	2300/4150	354
1— 300	G.E.	KT-574Y	2200	505
1— 200	G.E.	IK-17	400	580
1— 200	G.E.	KT557	440	1800
1— 200	G.E.	IK	440	865
1— 150	Whse.	CS	440	580
1— 150	Weighse.	CS856B	440	830
1— 125	Whse.	MS	440	485
1— 125	G.E.	KF-TEFC	440	3585
2— 125	Al. Ch.	AHW	2200	1750
1— 100	G.E.	IK-Vert.	2300	450
1— 100	G.E.	KT-513	220/440	1780

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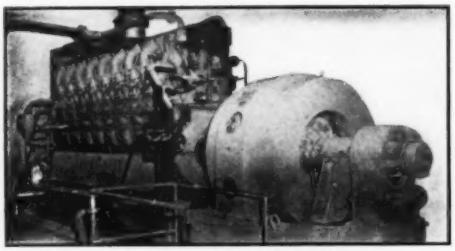
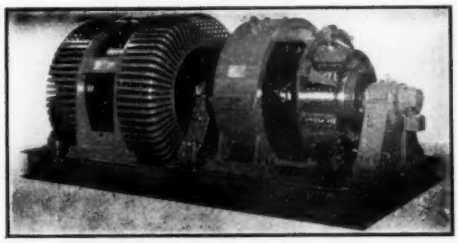
Read more about "The O'Brien Story" in the next issue of Power



1250 KVA GM DIESEL GENERATOR SET



500 KW WEST. MOTOR GENERATOR SET

MOTOR GENERATOR SETS

1—1500 KW GE MPC 300 V 5000 Amp.—2150 HP ATI-Syn Motor, 3/60/4000 Volt. Available immediately.
1—1000 K.W. West. 250 volt Flat Compound 500 RPM 1440 H.P. West. Syn. Mtr. .8 P.F. 3/25 cycle 2300 V. A.C. & D.C. Panels.
1—500 KW Westinghouse 250 Volt 900 RPM with 720 H.P. West. Syn. Motors 3/60/6600/13200 volt. Serial #813047 (year 1935) See actual photo above.
1—500 K.W. Crocker Wheeler CCD, 250 volt 720 RPM with 750 KVA Cr. Wh. Syn. Motor 3/6/2300 V. A.C. & D.C. Panels.
1—400 KW West. 500 Volt D.C. Any A.C. Voltage with 500 HP West. 350 RPM, 500 Volt Motor for complete drive.
1—360 KW GE CY 125, 180 V., Sep. Exc., 1200 RPM, 500 HP Syn. Mtr., 3/60/2300, 1942.
1—300 K.W. West. 3 wire 125/250 Volt 1200 RPM Generator (1938 year). Can furnish with suitable motor. Advise Requirement.
1—300 K.W. Elliott 250 Volt 1200 RPM with 500 H.P. Syn. Motor 3/60/2300/1200 RPM —Automatic Controller & D.C. Panel.
2—150 K.W. G.E. Type MPC—250 Volt 1200 RPM 3/60/2300/200 H.P. Syn. Motor Drive A.C. & D.C. Panels.
1—100 K.W. Al. Ch., 250 V. 1200 RPM 150 H.P. Syn. Mtr. 2/60 or 3/60 any voltage.
1—100 K.W. G.E.—C.D.—125 Volt D.C. 150 H.P. GE Syn. Mtr., 3/60/220/440/1200 RPM.
1—75 K.W. Burke 250 V., 900 RPM 113 H.P. Burke—Syn. M.D. 2 or 3 ph, any voltage.
2—50 KW GE 500 Volt DC, 75 HP, 3/60/440/1200 RPM.
Smaller Sizes and Types–Advise Requirements

CENTRIFUGAL PUMP

Qu.	GPM	TNH	Deser.	Size	HP	Speed
1	8,000	116'	Worthington	14"	300	1200
1	6,000	116'	Ingersoll-Rand	12"	200	1200
1	4,000	110'	Ingersoll-Rand	12"	200	1200
1	3,500	47'	Southwalk	12"	100	870
2	1,700	95'	De Laval	10"	60	1750
1	1,500	231'	Allis-Chalmers	8"	150	1750
1	1,200	40'	Worthington	6"	15	1750

Manufacturers of
Quality **RED LINE TRANSFORMERS** Built

Sizes range in size up to 3000 KVA, 3 phase and single phase, Interteen, O.I.S.C. and dry type to 33 KV primary.
Prompt Deliveries—Your Inquiries Invited

DIESEL & GASOLINE GENERATOR SETS

2—1250 K.V.A. GM 16 Cyl. 3/60/2300 New 1946 Comp. Plant. (See Photo Above)
1—937 K.V.A. GM 12 Cyl. New Engine. Rebuilt Gen. 3/60/480 or 2300.
1—625 K.V.A. Baldwin Series 600—New 1948 —1500 hours. 3/60/2300/514 RPM.
2—438 K.V.A. GM—West. 3/60/2200 360 RPM —New 1937. Complete Plant.
2—375 K.V.A. GM 8-268A, 3/60/480/1200 RPM.
1—300 K.W. GM New 8-268A, 230 DC.
1—250 K.V.A. GM Twin 6-71, 3/60/220/440.
1—125 K.V.A. GM New Twin 4-71, 3/60/220.
1—125 K.V.A. Hercules, 3/60/220/440/1500 Hrs
1—62.5 K.V.A. Cummins 6 Cyl. 3/60/220/440.
1—56 K.V.A. Climax Gasoline. 3/60/220/1200.
2—45 K.V.A. Chry. New 6 Cyl. 3/60/220/440.

ELECTRIC MOTORS

Qu.	HP	Make	Type	Volts	Speed
3	500	West.	CS	6600	514
1	400	G.E.	Syn.	2300	450
1	350	G.E.	MT18	2300	400
1	315	G.E.	Syn.	2200	720
1	200	West.	Syn.	2300	1200
1	150	Ideal	Syn.	220	1200
1	125	West.	Syn. (3 brg.)	550	600
1	125	Cent.	SC	440	1800
2	100	G.E.	Syn.	440	300
1	75	West.	CW	440	1200
1	50	West.	CS	440	3600

TURBO GENERATORS

1—780 KVA G.E.-Moore 3/60/2300/3600 RPM Non-Cond. 180 PSI 35 lb. B.P. New 1936.
1—500 KVA West. Non-Cond. 3/60/220/440, 150 PSI 10 lb. B.P.
2—375 KVA West. Non-Cond. 3/60/440 125 psi 5 B.P. New 1938

TURBO GENERATORS (Con't)

1—300 KW West. 3 wire 125/250 Volt D.C., Non-Cond. Turbo Unit 125 PSI, 5 lbs B.P. New 1938
1—75 KW G.E. Non-Cond. D.C. 125 volt.
1—35 KW G.E. Non-Cond. D.C. 125 volt.

AIR COMPRESSORS

1—12,000 CFM I.R. Turbo 3.25 Lb., direct 250 H.P., 440/3/60/3600.
1—5600 CFM I.R. PRE-2, 42/25½x30, 100 lb. direct 930 HP Syn. 1 P.F. 2300/60/3.
1—4690 CFM I.R. PRE-2 48/24x27 100 lb. direct 804 HP Syn. .8 PF 2300/60/3.
1—3000 CFM GE Turbo 5 lb. direct 90 HP 440/3/60/3600.
2—1400 CFM Sullivan WJ 3 Angle Cpd. 100 psi 22/13x16 belt.
2—1200 CFM I.R. 22/13x16 100 psi belt.
1—900 CFM CP 100 lb. 9CP Portable Diesel Compressor, Pneu. tires.
1—734 CFM Sullivan W-13 13/13x8 60 lb. belt.
1—528 CFM CP NSB 14x12 100 lb.
1—371 CFM Schramm 7¼/5x4 100 lb.
1—368 CFM I.R. ER-1 12x10 100 psi.
1—350 CFM I.R. type 40 7/6¼x5 air cooled 125 lb. direct 75 HP 220/440/60/3 870.
1—396 CFM Sullivan type WL-60 100 psi.
1—215 CFM Penna. 3A 10x8 50 lb.
1—173 CFM CP NSB 9x8 100 lb.
1—173 CFM Penna. 3A 9x8 100 lb.
1—122 CFM Worthington 7x7 Horiz. 100 lb.
2—80 CFM CP 6x7 TB 150 lb.
1—40 CFM I.R. Type 30 80 lb. Tank mtd. 7½ HP
2—21 CFM Curtis CJ-1000, 3 stage 850 lb.
5—16.86 I.R. Type 30, 3½/2x5 400 lb.
100—10 CFM I.R. Type N 26 lb. or 25" Hg. Vac.

BOILERS (ASME)

1—150 H.P. Ames Package Generator 200# A.S.M.E. 360/44 Volt, Control
1—352 H.P. Keeler Water Tube Cross Drum, 250# A.S.M.E.
2—360 H.P., Springfield, Cr. Drum, Str. Tube, Sect. Hdr., Water wall 250#
1—390 H.P., Springfield, Cr. Drum, Str. Tube, Sect. Hdr. Water wall. 300#
1—540 H.P. Keeler, Water Tube 250#, Steel Enclosed Renew 360
Renew 390

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GUARANTEED "REBUILTS" GIVE A-1 PERFORMANCE

SQUIRREL CAGE

MOTORS

3 Phase, 60 Cycle, 220 or 440 Volts (*2200 Volts or Higher)

H.P.	Make	Type	Speed
1000	*G. E. (New)	K6347S	1800
750	*A. C.		1800
750	*G. E.	KT	720
700	*G. E.	FT	3600
700	*Westgh.	CS39D	1800
450	*G. E.	KF567S	1200
400	*Westgh.	CS	1800
400	*Cont. (New)	NZ	1200
400	A. C. (New)	ANW	900
400	*G.E.	IK	514
350	*Cr. Wh.	SC	3600
300	*Westgh.	CS	3600
300	G. E.	IE-K	1200
300	A. C.	AR	900
250	*Westgh.	CS875S	1800
250	A. C.	630DSWW	1200
250	*L. Allis	OGX148S	720
250	G. E.	IK	600
200	*G. E.	FT549Y	3600
200	*G. E.	IK13B	1800
200	Westgh.	CS	720
200	*A. C.		720
200	G. E.	IK17	600
200	A. C.	ARWWT	600
150	*G. E.	FT539Y	3600
150	G. E.	KT546	1800
150	*A. C.	AN	1800
150	G. E.	IE-K	1800
150	*G. E.	IK	600
150	*Westgh.	CS	450
125	Westgh.	CS504S	3600
125	*A. C.	AR226	1800
125	Westgh.	CS	1200
100	*G. E.	FT542Z	1800
100	G. E.	FTRP	1800
100	*Westgh.	CS	1800
100	Rel. (New)	AA5085 (TEFC)	1200
100	A. C. (New)	AW	1200
100	*A. C.	AR	1200
100	G. E.	IK15A	1200
100	U. S.	SCV(Vert.)	1200
100	*Westgh.	CS(Vert.)	1200
100	A. C.	AN	900
100	G. E.	IK15A	514

Hundreds of Smaller Motors.

D. C. MOTORS

Mill Type—Pedestal Bearing—Reversing

HP	Make	Volts	Speed
3000	West. (Tandem)	525	600
1750	West.	600	550
1500	West.	525	600
1200	West.	525	600
1000	West.	450	600

230 Volts—Constant Speed

H.P.	Make	Type	Speed
375	Westgh.	Ped	650
200	Westgh.	SK210	800
175	G. E.	ELC11	750
125	G. E.	Marine	1200
100	G. E.	RC34	2500
100	Westgh.	SK173	850
100	A. C.	E182	575
75	G. E.	MDS106	485
50	G. E.	RC35	700
50	G. E.	DLC204	650
40	Cr.-Wh.	CMC	1800
40	G. E.	RC32	1200
40	A. C.		750
40	G. E.	CO2004	500
35	Cr.-Wh.	CM351	700
30	Westgh.	SK93	1750
30	Westgh.	SK120	975
30	G.E.	MD104½	725
30	Cr.-Wh.	CCM	450
30	G. E.	C-60	240
25	G. E.	CD93	1150
25	Westgh.	SK100L	1100

MANY OTHERS—1 HP and Up!

CRAFTSMANSHIP MEANS QUALITY

SLIP RING

MOTORS

3 Phase, 60 Cycle, 220 or 440 Volts (*2200 Volts or Higher)

H.P.	Make	Type	Speed
2500	*G. E.	MT	257
600	*Cr.-Wh.	131AQ	507
500	Westgh.	CW	350
400	*A. C.	ANY	505
400	A. C.	3-brg.	450
400	*G. E.	MT412	450
300	*G. E.	IM15	1800
300	G. E.	IM	900
300	G. E.	MT	600
300	Westgh.	CW	600
300	*G. E.	MT410	450
250	*G. E.	IM	900
250	G. E.	IM	720
250	Westgh.	HF15H	600
250	*G. E.	IM17A	514
200	G. E.	IM	1800
200	G. E.	IM15	1200
200	G. E.	IM	720
200	Westgh.	CW	600
200	G. E.	IM	600
150	Westgh.	CW772G	1200

MILL DRIVES

PAPER—STEEL

Variable Speed Packaged Units

HP	Make	Speed
150	Gen. Elec.	75/1075
100	Allis-Chalmers	75/1170
75	Westinghouse	75/1275
50	Gen. Elec.	75/1050
40	Gen. Elec.	100/1800
30	Gen. Elec.	100/1800

PARTIAL LIST ONLY — Send your inquiries — We can quote.

AC SYNCHRONOUS

MOTORS

3 Phase, 60 Cycle, 220 or 440 Volts (*2200 Volts or Higher)

H.P.	Make	Type	R.F.	Speed
1420	*Westgh.	Syn.	0.7	900
1400	*G. E.	ATI	0.35	720
800	G. E.	TS984	1.0	1800
720	*A. C.	Syn.	0.8	900
700	*G.E.(New)	TS975Z	1.0	1200
700	*Westgh.	Syn.	1.0	225
600	*G. E.	ATI	1.0	240
600	*G. E.	TS7640	1.0	900
360	G. E.	ATI	1.0	1200
320	*A. C.	Syn.	1.0	720
300	G. E.	ATI	0.8	900
300	*G. E.	ATI	1.0	720
300	*Ideal	SMM	0.8	257
250	*A. C.	Syn.	0.8	720
150	*Westgh.	HR	1.0	300
125	Parkinson	Syn.	0.9	900
125	*El. Ma.	Syn.	1.0	900
125	Cr.-Wh.	103S	1.0	900
125	*G. E.	TS	1.0	277
115	El. Ma.	EM	1.0	240
100	Cr.-Wh.	103S	0.8	900

AC SYNCHRONOUS

GENERATORS

3 Phase, 60 Cycle, 220 or 440 Volts (*2200 Volts or Higher)

KVA	Make	Type	P.F.	Speed
3500	*G. E.	ATI	0.8	720
1750	*Westgh.		0.7	900
1500	G. E.	ATI	0.8	720
700	*A. C.		0.8	900
300	G. E.	ATI	0.8	720
250	*A. C.		0.8	720
112½	*G. E.	ATB	0.8	1200
110	Cr.-Wh.	103	0.8	900
100	*G. E.	ATB	0.8	900
60	F-M	B	0.8	900
55	G. E.	ATB	0.8	1200
50	G. E.	ATB	0.8	1200

PHONE: CANAL 6-2900

CHICAGO Electric Co.

1320 West Cermak Road, Chicago 8, Ill.

CHICAGO ELECTRIC EXPERTS DO PRECISION REBUILDING

Craftsmanship is a vital part of Chicago Electric rebuilding. Each workman's pride in his ability and his personal satisfaction of doing a good job has enabled Chicago Electric to continually guarantee their service and equipment.

An Illinois Steel Mill needed Two 2500 HP motors. Chicago Electric delivered them in 45 days—fully guaranteed.

Whatever your needs in electrical power equipment—be sure to check with Chicago Electric first!

SPECIAL OFFERING ROTARY CONVERTERS!!

1000 KW Westinghouse Rotary Converter Input: 450 v. AC, 60 cy., 6 ph., 900 RPM Output: 600 v. DC, 1670 amps. Complete AC and DC Controls 1000 KVA OIWC Transformer, 4150/416 volts

500 KW General Electric Converter, Type HCC-P Input: 445 v. AC, 60 cy., 6 ph., 900 RPM Output: 600 v. DC, 834 amps. Complete AC and DC Controls 500 KVA OISC Transformer, 13200 / 445 volts

M. G. SETS

K.W.	Make	A.C.	D.C.
2400	A-C (3-unit)	4800/2400	525
2400	West. (3-unit)	4800/2400	600
1000	G. E. (3-unit)	11000 137½/275	
1000	West.(3-unit)	11000 137½/275	
1000	G. E.	2300	600
1000	G. E.	4000	250
750	A. C.	440	250
500	Al. Ch.	2300	250
500	Cr.-Wh.	220/440	250
450	G. E. (3 unit)	2300	125/250
250	West.-G. E.	440	250
200	Ridgeway	2200	250
150	G. E.	2300/440	250
150	G. E.	440	250/275
100	G. E. (25 cy)	440	125
100	G. E.	2300	250
100	G. E. Delco	440	120/240
75	Al. Ch.	440	250
60	Al. Ch.	2300	110
40	Cr.-Wh.	220	125
35	G. E.	440	125
25	Westgh.	2200	125
20	G. E.-Bogue	440	125
20	G. E.-Bogue	550	250
20	G. E.	440	250
15	G. E.	220	250
10	G. E.	440	125

TRANSFORMERS

KVA	Make	Ph.	Prim.	Sec.
2000	Pittsb.	1	12000	2300
1000	Westgh.	3	4800	480
850	Westgh.	3	4160	455
500	G. E.	3	13200	445
300	G. E.	3	12800	240/480
300	G. E.	3	2400	240/480
200	Westgh. (Air)	3	2400	480
167	A. C.	1	2400	240/480
100	G. E.	1	6900/11950	240/840
100	A. C.	1	7200	120/240
100	A. C.	1	2400	240/480
75	A. C.	1	7200	120/240
100	Al. Ch.	1	2400	120/240
75	Al. Ch.	1	2400	120/240
50	A. C.	1	2400	240/480

The BOSTON METALS Co. *offers* BOILERS, MILL MOTORS & TURBO-GENERATORS *at Bargain Prices*

2 MODERN PACKAGE TURBO-GENERATOR SETS

with self contained condensers

1350 K.V.A.—BUILT 1943

TURBINES: Westinghouse, Serial No. 2-A-9593-99 & 2A-9593-100. Impulse reaction type—7 stages condensing—3500 H.P.—4800 R.P.M. Steam pressure 440 P.S.I.—Exhaust pressure 27½" vacuum. Temp. 740°—weight 13000 lbs.

GENERATORS: Westinghouse, Serial No. 109S20P900 & 108S20P900—3 phase two pole type—2550 K.V.A.—82½ cycles—2210 volts—100% P.F.

THESE GENERATORS CAN BE RE-WOUND FOR APPROX. 1350 K.V.A.—3 PHASE—60 CYCLE 2300 OR 440 VOLT OPERATION WITH TURBINE SPEED REDUCED TO 3600 R.P.M.

CONDENSERS: Westinghouse—2 pass—2200 Sq. ft.—vacuum 27½"—¾" tubes 12 ft. long—weight, 26,700 lbs. Condensers mounted below turbine. Oil Pump & oil cooler mounted directly on unit. Unit completely mounted on pre-fab sub-base.

THESE UNITS CAN BE DELIVERED RE-WOUND IN A VERY SHORT TIME.

6 B&W BOILERS

cross drum sectional header

BUILT 1943—IMMEDIATE DELIVERY

Heating Surface	11417 sq. Ft.
Design Pressure	200 P.S.I.G.
Working Pressure	200 P.S.I.G.
Capacity	75,000 lbs./hour
Steam Temperature	Saturated
Furnace Volume	1024 Sq. Ft.
Feed Temperature	200°
Oil Burners	8 per boiler

BOILER DIMENSIONS

19' 4" wide, 16' 4½" high, 15' deep

BOILER TUBES

1667—1¼" straight, 12' 2" long
825—1¼" bent; 122—2" straight
(first 2 rows above fire box)
Downcomer & Uptake Tubes
4" & 4½" bent

WATER WALL SIDES IN FURNACE

HYDROSTATICALLY TESTED NOV. 1951 BY PRUDENTIAL LIFE INSURANCE CO.

3 MODERN TURBO-GENERATOR SETS

250 K.W.
440/3/60
1200 R.P.M.

TURBINES: Worthington-Moore, 440 lbs. W.P., 740° T.T., Serial No. 7454—7452—7432, type S4—5 stage condensing—28.5" Vac.—turbine speed 6097—gear speed 1200. Westinghouse-Moore reduct. gear 6097/1200.

GENERATORS: Westinghouse, 312 K.V.A.—250 K.W.—3/60/440 1200 r.p.m.—400 amps.—80% P.F.—125 volts d.c. excitation—exciters direct connected 5.5 K.W.

UNIT IS MOUNTED ON PRE-FAB SUB-BASE. BUILT-IN OIL COOLERS. THESE ARE MODERN UNITS RECENTLY REMOVED FROM A NAVAL VESSEL.

16 MILL MOTORS—*Complete With All Controls*

50 H.P.—230 VOLTS D.C.—600 R.P.M.

The BOSTON METALS Co.

313 E. Baltimore Street—Baltimore 2, Md.

Phone Curtis 5050

All items can be seen at the Boston Metals Co. Marine Warehouse, Curtis Bay, Baltimore

WORLD'S LARGEST INVENTORY

Established 1934

D & B Rated

TRANSFORMERS
WORLD'S LARGEST INVENTORY

KVA	PV	SV
1—6000	24000	5040/4800Y
1—8750	22000	600
1—3750	22000	440
1—3000	22000	440
1—3000	22000	480
1—2000	22000	550
3—2500	27400	2300
4—2000	21000	6800
3—2000	45/50000	2300
5—1500	33000	2300
1—1500	2200	600
4—1000	33000	2300
3—1000	13800	230/460
1—1000	2200	220 Delta
3— 833	2300	575

100 NEW, 15 KVA, Allis-Chalmers air-cooled transformers, 460/230 primary; 115/230 secondary.

KVA	PV	SV
2— 833	13800	460
4— 750	2200	244/488
3— 667	13200	2300
1— 667	13200	480
3— 667	6600	2300
3— 500	11400	40/80
1— 500	4600	460
2— 500	11000	2300
1— 450	11000	230
1— 450	11000	460
3— 400	1980	244/488
3— 400	2200	230/460

3—1250 KVA, G.E. transformers, 11,000 Pr. V. with 4 taps on 33,000, 2200 Sec. V., 25 cy. 1 ph. (O.K. for 60 cycle). Ser. 2,397,474-7-8.

PARTIAL LIST—2000 UNITS IN STOCK FROM ONE TO 333 KVA
ALSO AIR COOLED AND SWITCH GEAR

SQUIRREL CAGE—60 CYCLE

HP	Speed	Make
500 (3)	514	West.
450	720	G. E.
400 (2)	514	West.
300	600	West.
250 (2)	3600	G. E.
250	1200	Al. Ch.
250 (6)	900	West.
250 (2)	720	Open
200 (2)	1800	West. TEFC
200 (3)	1800	Wag., Rel.
200	1800	G.E.
200	600	Al. Ch.
150	900	G. E.
150	400	G. E.
125 (5)	1800	Al. Ch.
100 (2)	1800	West.

P.S. We stock 3500 new and rebuilt 1 HP to 100 HP

S. C. & S. R.—25 CY.

Quan.	HP	Speed	Make
1	650	365	S. R.
1	300	375	S. R.
1	300	750	S. C.
1	200	500	S. C.
5	200	500	S. R.
1	200	720	S. R.
1	200	750	S. C.
3	150	500	S. R.
10	135	1500	S. C.

Plus 872 smaller units 1 HP to 125 HP

MOTOR GENERATOR SETS AC-DC

Quan.	KW	Make	Volts
1	1500	G. E.	300
2	1000	G. E.	600
1	1000	G. E.	250
1	1000	West.	250
1	750	Al. Ch.	275
1	600	G. E.	250
1	500	West.	125
3	500	West.	250
2	500	G. E.	250/275
1	500	G. E.	275
1	400	West.	125/250
1	400	West.	500
1	325	G. E.	500
2	300	West.	275

Plus 238 sets from 1 KW to 150 KW in stock.

AC GENERATORS—ALTERNATORS—CONDENSERS

Quan.	KVA	HP	RPM	Cycle
2		2500	720	60
1		1675	600	40
2		1500	900	60
1		1500	1200	60
1		1430	514	60
3		1250	720	60
1		1250	1200	60
1		1000	750	25
2		1000	600	60
1		1000	750	60
1		800	900	60
1		720	900	60
2		650	139	60
1		500	720	60
1		412	225	60
1		400	450	60
3		400	1800	60
1		375	750	25
2		375	1200	60
1		350	720	60
1		312	1200	60
1		300	750	25
1		300	180	60
1		280	1200	60

Plus 78 smaller units from 3 KVA to 250 KVA

DC—ADJ. SPEED—230 V.

Quan.	HP	Make	Speed
1	3600	Dynam.	800/2000
1	650	G. E.	750/2000
1	300	G. E.	400/ 800
1	250	West.	250/ 675
4	250	West.	540/3000
1	125/190	G. E.	260/ 400
1	150	West.	320/ 580
1	150	Rel.	400/1200
1	100/150	West.	500/ 750
2	100	Rel.	575/1150
2	100	West.	450/1000
1	100	G.E.	1050/4000
1	60	El. Dyn.	525/1050
2	30/71	West.	560/ 780
1	50/60	G. E.	220/1000
2	50	Diehl	400/ 800
1	25/50	G. E.	300/1200
1	35	G. E.	250/1000
1	30	West.	500/1000
1	30	West.	700/1750
1	30	Rel. TEFC	400/1200
3	25	G. E.	500/1500

Plus 327 smaller units 1 HP to 25 HP

— M-G LATE ARRIVALS —

2—100 KW Can. W each composed of:
2—500 KW 50/125 V. DC 4000 amp. Generators #48187-8
1—1475 HP 600 rpm 2200/60/3
1—25 KW 125 V. DC Exciter

SLIP RING MOTORS

Quan.	HP	Speed	Make
1	1200	237	Cr. Wh.
1	600	1800	G. E.
1	500	1800	G. E.
1	400	514	G. E.
1	400	435	West.
1	300	500	G. E.
1	300	450	G. E.
2	250	600	G. E.
1	250	480	G. E.
2	200	600	G. E.
3	150	720	G.E.

Plus 837 smaller units 1 HP to 75 HP

ROTARY CONVERTORS

Quan.	KW	Make	Speed	Volts
3	500	G. E.	1200	250
3	400	West.	1200	250
1	300	West.	1200	250

P.S.—We Stock Explosion-Proof Motors—Class 1-D & 2-G

Note: We Stock 6000 New Motors, Controls, Frequency Changers
SEND US YOUR INQUIRIES!

CONSTANT SPEED—230 V.

HP or KW	Make	Speed
500 KW (2)	West. 125/250 V.	900
400 HP	El. Dyn.	1500
400 HP	G. E.	450
360 KW	G.E. 180 V.	1300
300 KW	G. E. 170 V.	1200
250 KW	Al. Ch.	750
150 KW	West. 125/250 V.	750
150 KW	G. E.	1200
150 HP	West.	1615/1785
125 HP	Star	1200
120 KW	G.E.	1250

Plus 675 smaller units 1 HP to 120 HP also 115 V. & 550 V. DC.

ELECTRIC EQUIPMENT COMPANY

PHONE LD65

New and Rebuilt — ROCHESTER, N. Y. — 1 H. P. to 2500 H. P.

MOTORS · MG SETS · TRANSFORMERS · CONTROLS · COMPRESSORS

There's more than 40% to 60% SAVINGS on

SCHOONMAKER DEPENDABLE DIESEL POWER

because:

Each Schoonmaker-sold Diesel Engine Unit is fully REMANUFACTURED in our plants by highly skilled, factory-trained Diesel engineers. Only genuine factory-made and approved parts are used and all REMANUFACTURING is in strict accordance with manufacturer's recommended procedures. Prior to shipment every engine is subjected to a FULL LOAD operating test in accordance with DEMA standards.

The Schoonmaker Plants and Warehouses located in Jersey City, N. J. and Sausalito (San Francisco), California give NATIONWIDE SERVICE from Coast to Coast with modern, efficient and reliable facilities.

Our reputation and many years of experience and SPECIALIZATION in Diesel power equipment gives you value that money cannot buy elsewhere.

So—Buy SCHOONMAKER because you buy the FINEST in DEPENDABLE DIESEL POWER.

A.G.

SCHOONMAKER CO., INC.

52 CHURCH ST., NEW YORK 7, N. Y.

PLANTS AND WAREHOUSES:
JERSEY CITY, N. J. AND SAUSALITO (S.F.), CALIFORNIA

PORTION OF ENGINE REMANUFACTURING FLOOR AND ONE OF THE ENGINE TEST STANDS AT OUR SAUSALITO, CALIF. PLANT.

A PARTIAL LIST OF OUR INVENTORY

KW	MAKE	MODEL	HP	RPM
1500	Fairbanks Morse	33E16	2000	300
1230	Nordberg	F6G168SC	1750	327
1136	Fairbanks Morse	38D	1600	720
1000	General Motors	16-278A	1600	720
750	General Motors	12-567	1080	720
500	General Motors	8-278A	750	720
500	Alco	6-12½x13T	750	600
500	General Motors	8-567	720	720
350	Baldwin	VO-6	510	450
320	Buckeye	80	480	600
320	Enterprise	DSG-6	460	450
300	General Motors	8-268A	450	1200
200	General Motors	8-268A	350	900
167	Ingersoll-Rand	S	255	600
160	Buckeye	80	240	600
100	General Motors	3-268A	150	1200
100	Worthington	BB-5	150	600
60	General Motors	6-71	90	1200
30	Inter. Harvester	UD-14	45	1200

ALTERNATING AND DIRECT CURRENT UNITS
STANDARD AND SPECIAL VOLTAGES AS REQUIRED

ONE YEAR GUARANTEE!

TURBINE GENERATOR UNITS
3 Phase 60 Cycle

25000 KVA G.E. Cond. 250 lbs. 13200 volts.
21500 KVA G.E. Cond. 250 lbs. 2400 volts.
18750 KVA A.Ch. Cond. 200 lbs. 13200 volts.
6250 KVA A.Ch. Cond. 200 lbs. 4160 volts.
5000 KVA G.E. Non-cond. Extr. 600 lbs.—125 lbs. Extr. 50 lbs. Exh. 13800 volts.
5000 KVA West. Cond. Extr. 400 lbs.—50 lbs. Extr. 600 volts.
3750 KVA A.Ch. Non-cond. Extr. 400 lbs.—170 lbs. Extr. 50 lbs. Exh. 13800 volts.
2500 KVA West. Cond. 250/400 lbs. 2400 volts.
1563 KVA G.E. Cond. Extr. 200/400 lbs.—20 lbs. Extr. 2400 volts.
1250 KVA West. Cond. 450 lbs. 2400/4160 volts.
1250 KVA West. Cond. Extr. 200 lbs.—20 lbs. Extr. 480 volts.
625 KVA West. Non-cond. 200 lbs.—15 lbs. Exh. 480 volts.

ENGINE GENERATOR UNITS
3 Phase 60 Cycle

770 KVA Skinner Uniflow, 150 lbs. 2300 volts.
750 KVA Ames Vert. Uniflow, 150 lbs. 4160 volts.
625 KVA Skinner Vert. Uniflow 150 lbs. 480 volts.
625 KVA Skinner Uniflow, 150 lbs. 240 volts.
312 KVA Skinner Uniflow, 150 lbs. 480/240 volts.

DIESEL GENERATOR UNITS
3 Phase 60 Cycle

1250 KVA General Motors, 2400 volts, 720 rpm.
1000 KVA DeLaVergne, 2400 volts, 200 rpm.
700 KVA Fairbanks-Morse, 2400 volts, 300 rpm.
600 KVA Fairbanks-Morse, 2400 volts, 300 rpm.
475 KVA Cooper-Bessemer, 2400 volts, 400 rpm.
300 KVA Worthington, 208-120 volts, 450 rpm.

GENERATORS
3 Phase 60/240 Cycle

2250 KVA G.E. 60 cy. 2400/480 volts, 3600 rpm.
2859 KVA (3) G.E. 180/240 cy. 2300/4150 volts, 3600/4800 rpm.
4600 KVA G.E. 90 cy. 2400 volts, 5400 rpm.
7500 KVA G.E. 60 cy. 13800 volts, 720 rpm.

STEAM BOILERS

100,000 lbs. per hr. Badenhausen, 170/700 lbs. pulv. coal.
50,000 lbs. per hr. B. & W., 420 lbs., pulv. coal.
30,000 lbs. per hr. B. & W., 435 lbs., gas or oil.
20,000 lbs. per hr. B. & W., 175 lbs., stoker coal.

TRANSFORMERS
60 Cycle

2,500 KVA (2) Mol. 1φ, 110,000-480 volts.
1,000 KVA (5) G.E. 3φ, 12000-4160 volts.
1,000 KVA (3) West. 1φ, 6900/11950-2300 volts.
667 KVA (3) Mol. 1φ, 19920/34500-2400 volts.
600 KVA (3) G.E. 3φ, 11000/22000-230/460 V.
500 KVA (6) G.E. 1φ, 33000-6600-2300 volts.
500 KVA (3) West. 1φ, 13800-2300 volts.
350 KVA (3) G.E. 1φ, 24000-480 volts.
150 KVA (3) West. 1φ, 19050/33000-2300 volts.
150 KVA (3) Allis 1φ, 13800-240/480 volts.
100 KVA (3) Pgh. 1φ, 7200/12500-120/240 V.

SYNCHRONOUS CONDENSER

7,500 KVA G.E., 3 phase, 60 cycle, 13800/6900/4000/2300 volts, 720 rpm.

INTERNATIONAL POWER MACHINERY CO.
1609 UNION COMMERCE BLDG. Telephone: MAin 1-9514 CLEVELAND 14, OHIO

STEAM POWER PLANT

5—714 HP Combustion Engineering WATER TUBE BOILERS, with Ebasco Superheaters, Sturtevant High Pressure Economizers, Green Chain Grate Stokers, Hagan Combustion Controls, Cages Feed Water Regulators, Clarage Forced Draft Fans, Sturtevant Induced Draft Fans, Smoke Stacks. Good for 250# pressure by Hartford.
1—705 HP Stirling 4 drum Boiler with B&W Superheater, Green Chain Grate Stoker, Sturtevant Economizers, Sturtevant Induced Draft Fan, with Smoke Stack. Good for 250# pressure by Hartford.
2—8000 HP Webster Water Heaters.
1—McCaslin Pivoted Bucket Conveyor System for handling coal and ashes. Approximately 300' long.
6—Steel Coal Bunkers, 80 tons each.
1—30" Wheeler Single Stage Circulating Pump, 30,000 GPM direct connected to 300 HP Allis-Chalmers Motor, 3/25 440, 360 RPM. (Has extra impeller for 15,000 GPM).
1—4"x6" Dayton-Dowd Centrifugal Pump direct connected to 125 HP General Electric-Curtis Steam turbine.
1—100 KW General Electric 125 Volt DC Generator direct connected to a General Electric-Curtis Steam Turbine, 2-stage with reduction gear, Type SO, 3600 to 1200 RPM.
1—Type 1A-60 Wheeler Turbo Air Pump direct connected to 75 HP General Electric-Curtis 2-stage Steam Turbine, 1750 RPM.
1—6" Wheeler Centrifugal Condensate Pump direct connected to a 20 HP General Electric-Curtis 2-stage Steam Turbine, 1800 RPM.
1—Combination Circulating Pump and Condensate Pump driven by 190 HP General Electric single Stage Steam Turbine through a Westinghouse Reduction Gear, 3500 to 790 RPM.
1—2" 2-stage LeCourtney Centrifugal Pump, 200 GPM 650' Head at 3700 RPM direct connected to 53 HP Westinghouse Steam Turbine.
1—3000 KVA General Electric Synchronous Converter, Type HCC, 6 phase, 25 cycle, 250 RPM, 600 Volts DC with 1—3150 KVA General Electric Transformer, 3 phase, 25 cycle, 6600/13200-415 Volts with starting panel and all instruments.
1—1600 KVA General Electric Synchronous Converter, Type HCC, 6 phase, 25 cycle, 750 RPM 600 Volts DC with 1—1050 KVA General Electric Transformer, 3 phase, 25 cycle, 13200/445 volts with starting panel and instruments.
1—500 KW Westinghouse Synchronous Converter, 6 phase, 60 cycle, 1200 RPM, 600 Volts DC with starting panel and instruments.
1—4000 KVA Westinghouse Transformer, 3 phase, 25 cycle, 13200/6600 volts.
7—700 KVA Westinghouse Transformers, single phase, 25 cycle, 7620/6600 volts to 13200 volts.
1—Kennecott Pressure Type Industrial Water Filter.
1—50-Ton Electric Traveling Crane—55'5½" Span.

Send for Complete Inventory

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2900 BRIGHTON BLVD.
P.O. Box 1708, DENVER, COLORADO

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1—400 KW G.E. Syn. 600 V. 720 RPM
2—300 KW WEST. Syn. 250 V. 1200 RPM
1—300 KW RIDGWAY Syn. 250 V. 1200 RPM
1—240 KW G.E. Syn. 250 V. 1200 RPM
1—225 KW G.E. Syn. 125 V. 1200 RPM
1—200 KW G.E. Syn. 250 V. 1200 RPM
1—200 KW RIDGWAY Syn. 250 V. 900 RPM
1—150 KW G.E. Syn. 250 V. 1200 RPM
1—150 KW WEST. Syn. 250 V. 1200 RPM
1—100 KW RIDGWAY Syn. 250 V. 1200 RPM
1— 50 KW G.E. Ind. 250 V. 1200 RPM

ROTARY CONVERTERS

1—500 KW G.E. Syn. 250 V. 1200 RPM
1—500 KW WEST. Syn. 250 V. 1200 RPM
2—300 KW Al-Ch. Syn. 250 V. 1200 RPM
1—200 KW G.E. Syn. 250 V. 1200 RPM
1—150 KW G.E. Syn. 250 V. 1200 RPM
1—150 KW WEST. Syn. 250 V. 1200 RPM

WALLACE E. KIRK COMPANY
502 Grant Bldg., Pittsburgh 19, Pa.

COMPLETE DIESEL PLANT

3—Fairbanks Morse units. 805 HP—556 KW; 690 HP—473 KW; 300 HP—200 KW. Model 33-E-14. 3/60/2400 volts. New 1940. Will sell all or part. With auxiliaries. Condition excellent.

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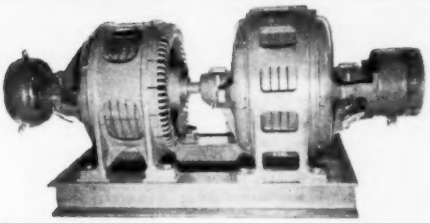

Photo of special 500 KVA AC synch. M-G set—engineered, rebuilt and assembled in our shop—shipped to Mexico for operation of electric pipewelding machine.

Get the Benefit of our 46 YEARS of Engineering Experience - -

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Complete shop facilities—Dynamic Balancing—Dynamometer Testing—plus a large selection of fine equipment—these are among the many advantages when you buy Wagner "Certified Rebuilt".

PARTIAL LISTING OF LARGER ITEMS IN STOCK

A. C. MOTORS

H.P.	Mfr.	Type	Volts	Speed
800	G.E.	Slipring	2200/4000	600
750	Whse.	Synch.	2200,4000	900
700	G.E.	Synch.	2200	514
500	G.E.	Sq. cage	6600/4000	1800
500	G.E.	Sq. cage	440	3600
500	G.E.	Slipring	220/440	450
500	Al. Ch.	Synch.	440	400
450	Whse.	Synch.	2300	900
400	Whse.	Sq. cage	2200	1800
400	Whse.	Slipring	2300	514
350	G.E.	Slipring	440	720
300	G.E.	Sq. cage	2300	1800
300	Whse.	Synch.	2200/440	600
300	G.E.	Slipring	2300	1800
300	Al. Ch.	Slipring	440	360
250	Whse.	Sq. cage	2200/440	1200
250	G.E.	Sq. cage	440	600
250	Al. Ch.	Slipring	2300	514
225	E.M.	Synch.	440	1800
225	G.E.	Synch.	2300	900
225	G.E.	Synch.	220/440	600
200	G.E.	Slipring	220/440	360
200	F.M. bb	Slipring	2300	900

A. C. GENERATORS — 60 CYCLE

KVA	Mfr.	Type	Volts	Speed
1000	Whse. syn. cond.		4000/2300	900
625	Gen. Elec.	ATB	2300	450
625	G.E. 25 cycle	ATB	2300	750
500	El. Machy.		480	900
485	Allis. Ch.	1 brg.	480	400
312	Gen. Elec.	ATB	240/480	600
275	G.E. 25 cycle	ATI	480	750
250	Whse.	G	2400/480	600
225	Gen. Elec.	ATB	2300	900
225	Gen. Elec.	ATB	240/480	600
150	Whse.		2300/480	600
125	Gen. Elec. (2)	ATB	240/480	900
112	Gen. Elec.	ATB	240/480	900

M-G SETS

KW	Mfr.	Input V	Output V
500	G.E. HCC conv.	2300 AC	275 DC
300	Allis Ch.	2200/440 AC	125/250 DC
300	Whse.*	2800 AC	600 DC
200	Whse.*	2300 AC	275 DC
200	Gen. Elec.*	220/440 AC	125 DC
150	Whse.*	2300 AC	275 DC
150	Whse.*	220/440 AC	125/250 DC
105	Century b.b.	220/440 AC	70 DC
100	Whse.*	220/440 AC	250 DC
100	Delco b.b.	220/440 AC	125/250 DC
100	Allis Ch.	220/440 AC	125 DC
100	Allis Ch.*	220/440 AC	50 DC
75	Gen. Elec. (2)	220/440 AC	250 DC
60	Gen. Elec.*	220/440 AC	60 DC
50	Allis Ch. (2)	220/440 AC	125/250 DC
50	Whse.	2200/440 AC	250 DC
45	Gen. Elec.*	220/440 AC	60 DC
40	Whse.	220/440 AC	125 DC

D. C. GENERATORS

KW	Mfr.	Type	Volts	Speed
300	Gen. Elec.	MPC	275	700
300	Whse.	SK	600	900
150	Whse.	SK191	125/250	900
125	Gen. Elec.	RC38	250	675
105	Century b.b.	1500 amp.	70	1200
100	Gen. Elec.	C	250	750
100	Allis Ch.	E	125	1200
75	Gen. Elec.	CD	250	1500
60	Gen. Elec.	LC	250	700
50	Allis Ch. (2)	EW	125/250	1200

D. C. MOTORS

HP	Mfr.	Type	Volts	Speed
300	Gen. Elec.	MPC	230	500
200	Reliance	1400T	230	850
175	Gen. Elec.	RC	230	1650
150	Gen. Elec.	MPC	230	500/1200
150	Whse.	SK183	230	1150
100	Gen. Elec.	C	230	575/1000
75	Gen. Elec. (2)	CD115	230	1150

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MOTORS • GENERATORS • TRANSFORMERS

7x7 AIR COMPRESSOR

Ingersoll Rand 7x7 Class ER1—100#—with or without drive.

1—400 KW Westinghouse 500 V. DC 750 RPM 800 Amps. Motor—580 HP. Synchronous 3 Ph. 25 cycle 440 V. 750 RPM.

ANODIZING M.G. SET

33 KW Gen. Elect. Type BR. Form C 60 V. DC. Direct connected to 50 HP 3/60/440/1800 Gen. Elect. Motor.

600 HP GEAR REDUCER

1—600 HP Farrel-Birmingham Herringbone Gear Unit. Type SL. Size 30/16 Speed 730 RPM to 115 RPM.

400 HP GEAR REDUCER

1—400 HP Nuttall (Westinghouse) Type LMR-25 Single Helical Heavy Duty Reducer—6-1 Ratio at 900 RPM with High Speed Shaft Extension for Brake.

400 HP SYNCH. MOTOR

1—400 HP Westinghouse Synchronous Motor. 3/60/2300/900 RPM. Unity P.F. with direct connected exciter—Late Type.

MOTORS

60-50-25 Cycle in Stock—All Sizes. Slipring—Squirrel Cage—Synchronous. All types of Control Equipment.

100 HP Westinghouse Slipring 3 Bearing 3/60/220/440/435 RPM.

100 HP Gen. Electric Type I form K 3/60/2300/600 RPM.

100 HP Gen. Electric Type KT 356 3/60/2200/900 RPM.

125 HP Gen. Electric Type I form K 3/60/440/720 RPM.

125 HP Gen. Electric Type KT 3/60/2300/1200 RPM.

150 HP Gen. Electric Type KT 3/60/440/500 RPM.

150 HP Gen. Electric Type I form K 3/60/2300/720 RPM.

150 HP Gen. Electric Type I form K 3/60/2300/900 RPM.

200 HP Gen. Electric Slipring Type I form M 3/60/440/600 RPM.

200 HP Gen. Electric Type KT 3/60/440/600 RPM.

250 HP Gen. Electric Type KT 3/60/440/720 RPM.

350 KW GENERATORS

2—350 KW General Electric Generators Type MPC, 250 Volt DC, 720 RPM Single Bearing Machines.

T.E.F.C. MOTORS

60 HP Westinghouse CS-607 3/60/440/900 X-Proof

50 HP Ideal New. 3/60/220/440/1800

2—20 HP Louis Allis ES. 365 3/60/220/440/1800 X-Proof

15 HP Louis Allis EX-364 3/60/220/440/1800 X-Proof.

DC CIRCUIT BREAKERS

1—1000 AMP. Condit. 2 Pole

1—1600 AMP. Condit. 2 Pole

1—1600 AMP. Westinghouse 2 Pole

1—3000 AMP. Westinghouse 2 Pole

125 VOLT DC MOTORS

1—100 HP Crocker Wheeler 125 Volt DC 850 RPM Ball Bearing

1—150 HP Crocker Wheel 125 Volt DC 850 RPM Ball Bearing.

Will make 1200 RPM 125 Volt Generators.

REBUILT TRANSFORMERS

3—100 KVA G.E. 1 ph., 60 cy. 2400/4160 pri. 120/240 sec.

3—1667 KVA Wagner 1 ph., 25 cy., 23,000 pri., 575 sec.

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CALL SANDMAN FOR ONE-STOP SERVICE

MOTORS: G.E., U.S., Crocker-Wheeler, Reliance, Belgian, Diehl, Hoover, Marble-Card

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TRANSFORMERS: G.E., Wagner, Saban, Eisler

RECTIFIERS: Mellaphone, Ther, Cadillac

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DRUM CONTROLLERS—GRIDS—RAILS—BASES—GENERATORS—FREQUENCY CHANGERS—SPECIAL VOLTAGE APPARATUS

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LARGE MOTORS AND MG SETS MOTORS 2300 VOLTS 3 PH. 60 CY.

No. 1—West. MG Set, Syn. 720 H.P., 900 RPM—with 2—300 KW 600 Volt D.C. Gen.

Nos. 2 & 3—G.E. MG Sets—Each Ind. 750 HP—714 RPM with 500 KW Gen. 1200 Volt.

No. 4—Slip Ring G.E. Type MT-434-S 750 HP 450 RPM Motor.

SMITH, LINDSTROM and DUNCAN, Inc.

16 TOLAND STREET

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25 H.P. GEAR HEADS 352 RPM

FR. 365—X-PR. (Class 1—Group D)

Parallel Drive — Pacific Gears

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HEMPHILL GUARANTEED EQUIPMENT

GUARANTEED GOOD BECAUSE REBUILT AND TESTED BY HEMPHILL ELECTRICAL ENGINEERS

TRANSFORMERS—60 Cycle

Qu.	KVA	Make	Type	Ph.	Voltages
1	1500	Penna.	OISC	3	4150x2400
1	1500	GE	Pyranol	3	4150x2400
1	500	Kuhl.	OISC	1	4600x2300
1	333	GE	OISC	1	13200x220/440
1	200	GE	HT	3	2300x230
1	200	Pitts.	ODSC	1	4600x110/220
1	200	Mol.	C	1	2300x220/440
3	100	Wagner	HEB	1	240x120/120
1	100	Amer.		1	15000x2300
3	100	GE	Auto	1	4150Tx2400Y
9	50	GE	H	1	13750x125x214Y
1	50	Al. Ch.	ODSC	1	13550x120/240
2	50	Pittg.	Sub	1	13530x120/240
1	50	Amer.	OISC	1	6600/13200x220/440
1	50	Amer.	WF	1	240x240/30
1	50	GE	KS	1	2300x230
1	50	Amer.	AT	1	230x220/44
1	37½	GE	H	1	2200x110/220
1	37½	Amer.	RS	1	6900/13200x230/440
1	37½	Amer.	OISCID	1	6600/13200x220/440
2	37½	Amer.	AT	1	220x220/44

MOTOR GENERATOR SETS

Qu.	KW	Make	Speed	DC	AC
7	1000	GE	514	600	2300/4150 Syn.
1	200	Whse.	900	250	220/440 Syn.
1	150	GE	1200	125/250	2300 Syn.
1	150	Whse.	600	125	4150 Syn.
1	125	CW	1200	125	220/440 SC
1	100	GE	900	250	2300 Syn.
1	94	GE	1200	60	440 SC
1	94	GE	1200	60	4150 Syn.
1	30	GE	900	230	220 Syn.

SYNCHRONOUS MOTORS

Qu.	H.P.	Make	Speed	Type	Volts
1	300	El. Mach.	720	TEFC	2200
1	200	El. Prod.	577		4150
1	150	GE	720	ATI	2300
1	150	GE	1800	TS	220
1	150	Whse.	900		220

SLIP RING MOTORS

Qu.	H.P.	Make	Speed	Type	Volts
1	1750	GE	1160	K	2600 Sq. Cg.
1	500	GE	440	IM	900
1	250	Whse.	600	CW	440
1	200	GE	1800	MT	2300
1	200	Whse.	600	CW	440
1	200	GE	600	MT	440
1	100	GE	400	IM	440
1	75	GE	1200	MT Vert.	220
1	60	GE	1750	MT	220
1	60	GE	900	MT	440
1	50	GE	1720	MT	220
1	50	Whse.	900	CW	220
1	50	GE	1700	MT	220
1	50	GE	600	MT	220
1	40	GE	1200	MT	220

250 KVA Elliott 208V 200# non-cond.

SPECIAL—WELDING
1—150 KVA GE. type KWC, 1 ph., 550 V. sec. 12.22/0.05 V. Thyratron Spot and Seam. Control CR 7503

SPECIAL M.G., A.C. WELDER
1—176 KVA Whse., 220 V. 57 PF. 1200 RPM. 1 ph., with 75 HP Slip Ring, 440V, type CW. Exc. & Control

Member of the National Industrial Service Assn., Inc.
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PHONE NEW YORK—LONGACRE 5-3337
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2—705 H.P. 200# B.&W. Stirling, 1918. We have new tubes on location.

2—500 H.P. 450 Lb. Walsh-Widener Sectional Header Cross Drum Water Tube Boilers, Complete with Superheaters, Boiler Feed Pumps, and all Miscellaneous Equipment. Built in 1928.

2—250 H.P. Erie City 3 Drum Low Head Boilers, 1942, 200 Lb. Working Pressure, Peabody Burners, Brooks Control Equipment, Pratt-Daniel Stack on each Boiler Pumps, Heater, and Piping.

1—200 H.P. Union Iron Works, 200#, Universal Economic type.

1—600 H.P. B&W Sect. Header Boiler, 200#.

1—150 H.P. Bros 150# w.p., 3 drum, Bent tube, self contained, steel encased, brick lined. 9000# steam per hour.

Miscellaneous Scotch Marine Boilers, 75 to 150 H.P. available.

1—500 H.P. Cleaver Brooks Package Boiler, 150 Lbs. #6 Oil, 1947.

A Number of Self-Contained & Economic Units, 50-150 H.P., 100-200 Lbs. Pressure.

Combustion Engrg., Spreader Stoker complete with fan & Hogan Controls-Stoker. Designed for 600 H.P. boiler at 200% of rating, or 1200 H.P.

1—6 Cylinder Enterprise Diesel 800 H.P. direct connected to 1000 K.V.A., 3 ph., 60 cyl., 2400 V. Elliot Generator complete with all aux. Unit built 1948, 1400 hrs. use only.

3—B.&W. Type FF Integral Boilers, 16,000# each, 160# w.p. 2 in one plant. Complete with all equipment and stoker fired. 1 in another plant complete with all equipment, stoker fired. Built 1946.

A complete plant consisting of 2 Keeler C.P. Boilers complete with Detroit Roto-Stoker, all auxiliaries and piping. Built 1942. Boiler will move without disturbing pressure parts. 160# w.p., 21000# per hour each.

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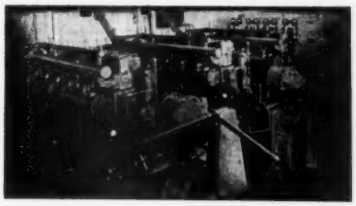

Each Plant consists of

3 Worthington Model BB 5—150 HP Diesel Engine Generating Units direct connected to Westinghouse Generators.

Rated 100 KW—125 KVA—3 phase, 60 cycle, 460 Volts, AC Current at 600 RPM.

Suitable for reconnection to 85 KW—3/50/230/400 at 500 RPM.

Complete with all accessories and auxiliaries including evaporative coolers—switchboard—distribution panel.

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STEAM TURBINE UNITS
STEAM ENGINE UNITS
DIESEL ENGINE UNITS
GASOLINE ENGINE UNITS

SLIP RING MOTORS

220 or 440 volt, 60 cycle, 3 phase, slip ring Motors Rebuilt

H.P.	Make	Type	Speed	Description
400	G.E.	I-M	1200	S.B.
300	G.E.	I-M	1200	S.B.
200	G.E.	I-M	1200	S.B.
150	G.E.	I-M	1200	S.B.
150	G.E.	I-M	1800	S.B.
100	G.E.	MT-360	1800	S.B.
100	G.E.	I-M	900	S.B.
100	G.E.	I-M	720	S.B.
75	G.E.	MT-343	1200	S.B.
75	G.E.	I-M	900	S.B.
75	West.	CW	720	S.B.
75	G.E.	I-M	720	S.B.
60	G.E.	MT-333	1800	S.B.
40	G.E.	I-M	1800	S.B.

BRAND NEW SQUIRREL CAGE MOTORS

Totally enclosed, fan cooled, explosion proof, open 220 or 440 Volt, 60 Cycle, 3 Phase

H.P.	Make	Type	Speed	Description
150	G.E.	K-6326	3600	TEFCBB
150	G.E.	K-6326	1800	TEFCBB
125	G.E.	K-6326	1200	TEFCBB
100	West.	CS-607S	1800	TEFCBB
100	West.	CS-504	1800	B. B. open
75	West.	CS-504	3600	TEFCBBXP
75	A.C.	ARZ	1800	TEFCBB used
75	West.	CS-504	1800	TEFCBBXP
75	West.	CS-445	1800	B. B. open

NEW SQUIRREL CAGE MOTORS

H.P.	Make	Type	Speed	Description
75	F.M.	QS-445	1800	B. B. open
75	West.	CS-505	1200	TEFCBBXP
60	West.	CS-504B	1800	TEFCBBXP
60	G.E.	K-5945	1800	TEFCBBXP
60	L.A.	OG-44	1800	B. B. open
60	F.M.	QS-444	1800	B. B. open
50	Master	FB-404	3600	TEFCBBXP
50	G.E.	K-445	1800	TEFCBB
50	G.E.	K-405	1800	S. B. drip
50	West.	CS-445	1200	S. B. open
50	G.E.	K-505	900	TEFCBBXP
40	A.C.	AR-444	3600	TEFCBBXP
40	G.E.	KF-365S	3600	B. B. Splash
40	West.	CS-405	1800	TEFCBB
40	L.A.	K-405	1800	TEFCBBXP
40	G.E.	404	1800	B. B. open

SQUIRREL CAGE MOTORS REBUILT

220 or 440 Volt, 60 Cycle, 3 Phase, Open

H.P.	Make	Type	Speed	Description
200	Wagner	RP-2-26	1800	S. B.
200	Wagner		1200	S. B.
200	G.E.	K-564	900	B. B. new
150	West.	CS	1800	S. B.
150	G.E.	I-K	1200	S. B.

REBUILT SQUIRREL CAGE MOTORS

H.P.	Make	Type	Speed	Description
150	G.E.	I-K	720	S. B.
100	West.	CS	1800	S. B.
100	G.E.	I-K	1800	S. B.
100	G.E.	I-K	1200	
100	G.E.	KT-347	1200	S. B.
100	West.	MS	1200	S. B.
100	West.	CS	900	S. B.
100	G.E.	I-K	720	S. B.
75	West.	CS	1800	S. B.
75	West.	CS	1200	S.B.
75	G.E.	I-K	900	
75	G.E.	KT-343	1200	S.B.
75	West.	CS-WL-607	1200	S. B. B.
75	G.E.	KT-552	900	S. B.
75	G.E.	KT-352	900	S. B.
75	G.E.	KT-346	720	S. B.
60	G.E.	KT-333	1800	S. B.
60	G.E.	I-K	1200	S. B.
60	West.	CS	1200	S. B.
60	G.E.	KT-346	900	S. B.
60	G.E.	I-K	900	S. B.
50	G.E.	I-K	1800	S. B.
50	Cr. Wh.	25R	1800	S. B.
50	G.E.	KT-327	1800	S. B.
50	G.E.	KT-336	1200	S. B.
50	West.	CS	1200	S. B.

We hav oin stock explosive proof motors 220/440/60/3 ranging in HP from ½ to 50 HP 900 to 1800 RPM.
We also carry in stock a large quantity of used electric motors from 1 HP up to 500 HP., generators, transformers and control equipment. Upon receipt of your inquiries, we shall be glad to quote.

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STEAM — ELECTRIC — HYDRO — DIESEL

"Export Orders Carefully Executed"

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- TURBO-GENERATORS—Condensing—500 to 20,000 KW; some extraction type, pressures 200 to 450#
- TURBO-GENERATORS—Non-condensing—300 to 3000 KW. 150# to 450#, some extraction with high back pressure
- STEAM GENERATORS—30000# to 100000# per hr. 150# to 450#
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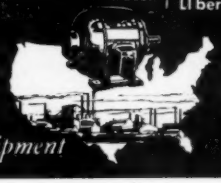

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300	Elliott		1200
250	Cr. Wh.	Syn.	1200
200	Delco		1200
150	West.	SK	900
125 (2)	G.E.	MPC	1200
100	West.	SK	1200
75 (2)	Cr. Wh.		1200
50	West.	SK	900
40	West.	SK	1150
40	ABBee	5VG3	1150
30	G.E.	TC93-4	1800
25	G.E.	RC	1150
20	Walton	D	1150
15	Star		1750
10	G.E.	RC	1150
7½	West.	SK	1750

GENERATORS—125 V. D.C.

KW	Make	Type	Speed
150 (2)	West.	SK	1200
100	El. Mchy.	851-T	1200
100	G.E.	RC	1200
100 (3)	West.	SK	900
100	G.E.	MPC	900
75	G.E.	DLC	1150
60 (2)	West.	SK	1800
50	G.E.	RC	1150
50	Cr. Wh.	CCD	1160

GENERATORS—600 V. D.C.

KW	Make	Type	Speed
400 (4)	G.E.	MPC	1200
325	G.E.	MPC	1200

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Amp.	Make	Voltage
10000	J-L	5/10
7500 (2)	Nor.	7½
5000	HYW	8
2500	Chandey.	6/12
500	Chandey.	12
1500	Century	24
500	West.	32
1000	Century	32
1000	Chandey.	40
1500	Century	40
1500	G.E.	50
1000	G.E.	60
1000	G.E.	75

MOTORS—230 V. D.C.

H.P.	Make	Type	Speed
187½	G.E.	MDS	435
150	Sprague	LU	1700
100	Al. Ch.		1150
100	F-M	TRC	725
100	G.E.	RC-36	775
90/45 (2)	G.E.	RF-17	950/450
75	Cr. Wh.	CMC-125H	375/950
60	West.	SK	680
60	West.	SK	250/1000
50	G.E.	CD-93	3600
50 (2)	West.	SK	585
50	G.E.	RF	250/1000

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150	G.E.	ATB	150 cy.

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200	G.E.	KF	880
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200	G.E.	KG	700
150	Wagner	31VRN	900
150	West.	CS	600
125	Al. Ch. (5)	AR	1760
125	G.E.	IK	1150
100	G.E.	KT	1800
100	G.E.	IK	1750
100	West.	CS	1750
100 (2)	Al. Ch.	AR	1150
100	G.E.	K	1175
100	West.		870
75 (2)	West.	CS	1750
75	G.E.	KT	900
75	West.	CS	720

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H.P.	Make	Type	Speed
500	Elliott		1180
500 (2)	G.E.	IM	450
400	G.E.	IM	900
400	West.	CW	435
250	G.E.	IM	435
200 (2)	G.E.	IM	1170
200	G.E.	MT	1175
125	West.	CW	1750
100	G.E.	MT	1150
75	Lincoln		1750
75	G.E.	MT	900
75	West.	CW	690
60	G.E.	MT	1720
60	West.	CW	290

MOTORS—Synchronous

H.P.	Make	Speed
475	West.	720
300	G.E.	900
200 (2)	West.	900
200	Burke	900
180	G.E.	900
165	G.E.	1200
150	G.E.	900
150	G.E.	720
75	G.E.	900

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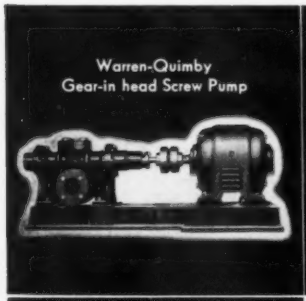
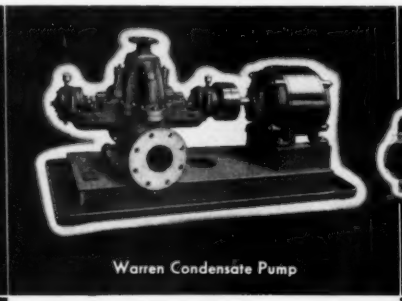
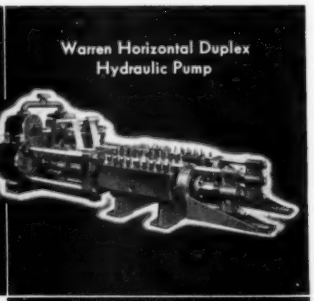


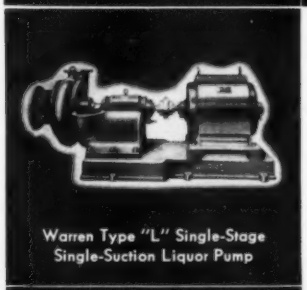
Warren-Quimby Gear-in head Screw Pump



Warren Condensate Pump



Warren Horizontal Duplex Hydraulic Pump



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There's a Warren or Warren-Quimby Pump for practically all industrial pumping applications, and our large variety of types and sizes assures an unbiased recommendation. The value of this should not be underestimated because a recommendation that barely meets operating conditions and requirements can prove to be anything but a profitable long range investment, regardless of any initial advantage in cost.

It will pay you to check with Warren on your next pumping job.

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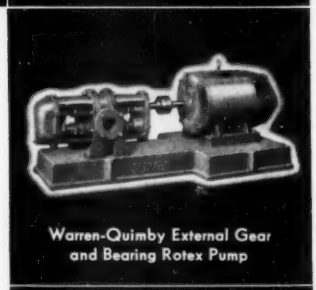
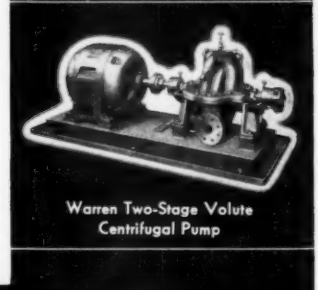


Warren-Quimby External Gear and Bearing Rotex Pump

Warren Type DBL, Single-Stage Double Suction, Centrifugal Pump



Warren Two-Stage Volute Centrifugal Pump

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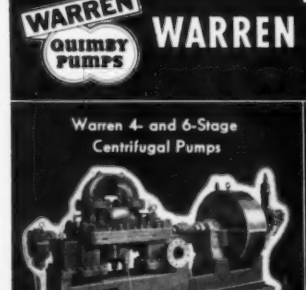

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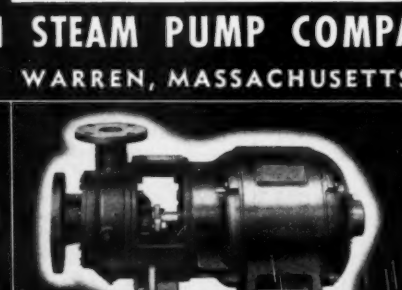

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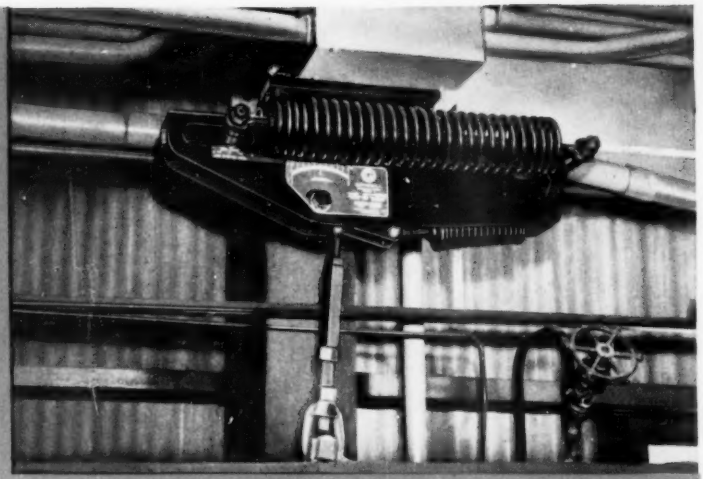
. . . calls for supports that are flexible



Grinnell Model L Constant-Support on 12-inch main steam at Somerset Power Station, Montaup Electric Co., Somerset, Mass. Pressure, 1300 psi; temperature, 950°F; load, approximately 4000 pounds. Note minimum headroom available.

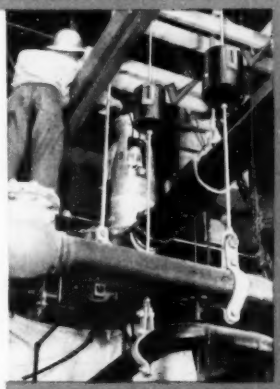
Thermal deflection of piping in today's high pressure, high temperature power stations necessitates flexible support of piping.

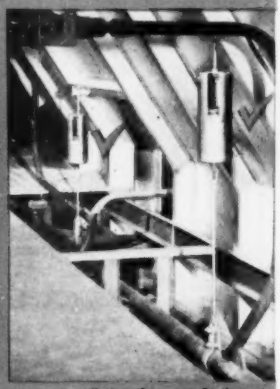
Where reactive forces at terminal points in a piping system must be kept within specified limits, constant-support type hangers are recommended. They are designed to provide substantially uniform supporting force equal to the pipe load throughout the travel range and should be used at superheater outlets, turbine connections, and also on high temperature and other critical lines.

When pipe lines are subject to vertical movement and restrictive conditions do not require the use of a constant-support type, variable spring hangers are recommended. They should be designed to support not less than 85% or more than 120% of the designed load for the total travel.

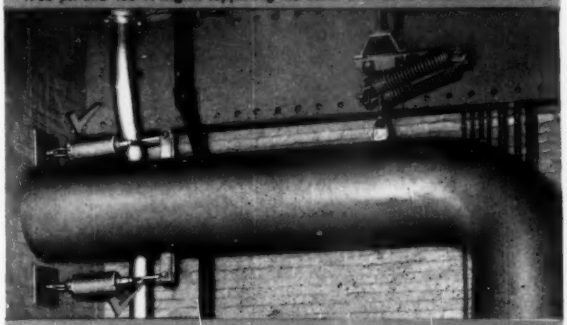
When necessary to prevent abnormal movement or vibration in pipe lines, controls or sway braces of the energy-absorbing or instant-acting, counter force type are recommended.

Grinnell manufactures a complete line of engineered pipe hangers and supports; maintains a laboratory staff of trained technicians; provides highly skilled assistance and advice right from the design stage; and offers experienced field engineering service.





Grinnell Pre-Engineered Variable Spring Hangers installed at Somerset Station. Left: supporting boiler feed discharge lines, carrying water at approximately 1785 psi and 455°F. Right: supporting the boiler blow-down header and lines.



Grinnell Vibration Controls on main steam line at Somerset Station.

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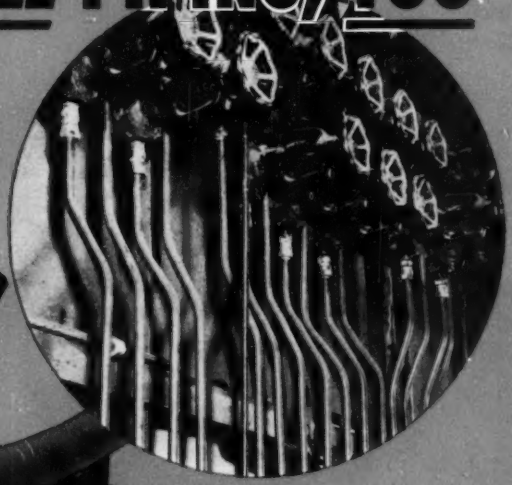
BIG STEAM!



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